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Institutional varieties and entrepreneurship: an empirical analysis

WOODHOUSE, Drew

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**Institutional Varieties and
Entrepreneurship:
An Empirical Analysis**

Drew Woodhouse

This thesis is submitted in partial fulfilment of the requirements of
Sheffield Hallam University for the degree of

Doctor of Philosophy

January 2020

Dedicated to

my loving parents, Julie and Gary Woodhouse. . .

Declaration

I hereby declare that:

1. I have not been enrolled for another award of the University, or other academic or professional organisation, whilst undertaking my research degree.
2. None of the material contained in the thesis has been used in any other submission for an academic award.
3. I am aware of and understand the University's policy on plagiarism and certify that this thesis is my own work. The use of all published or other sources of material consulted have been properly and fully acknowledged.
4. The work undertaken towards the thesis has been conducted in accordance with the SHU Principles of Integrity in Research and the SHU Research Ethics Policy.
5. The word count of the thesis is below 80,000.

Drew Woodhouse

January 2020

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Abstract

A growing body of literature on comparative international entrepreneurship has focussed on exploring the factors that explain differences in entrepreneurial activity across countries. In particular, the institutional environment is regarded as a crucial influence on this activity, yet there is less agreement about which institutions matter, and more importantly, in what ways do they matter. Much of the research focussed on explaining the influence of institutions on entrepreneurship has taken a specific and *narrow* approach to institutional theory. This views institutions as ‘*converging*’ creations which posit a theoretical ‘one-best-way’, largely seen as liberal and non-interventionist. This approach to institutional theory overlooks the nuanced *diversity* of the institutional environment which defines the architecture of capitalist economies.

In order to develop a broader understanding of this phenomenon, this thesis utilises perspectives from comparative institutionalism. The intent of this research is to empirically understand institutional diversity across countries, and its potential impact on comparative international entrepreneurship.

This study utilises a quantitative approach with two sequential steps. The first step comprises of a principal components analysis with the attempt to develop robust quantitative variables which proxy for a countries institutional context. A cluster

analysis of these variables is further employed to provide an objective contextual taxonomy of institutions and ‘diversities of institutional systems’. This objective contextual taxonomy helps give legitimacy to such diversity approach. The variables here are then transformed for the second step, which utilises multivariate panel modelling. The overall aim of this step is to estimate various model specifications outlining potential statistical relationships and directions between institutional diversities and aggregate level of entrepreneurship.

The results of this analysis present three key contributions. Firstly, that there exists rich institutional diversity between political economies, identified by nine taxonomies of countries across an optimum clustering of four ‘modes of capitalism’, defined by complementary variants across institutional sub-spheres. Secondly, the relationship between the degree of institutional coordination within the institutional complementarity format and the level of entrepreneurial activity is non-linear. Specifically, the relationship is quadratic and ‘U’ shaped. Where the institutional structure of the political economy allows for higher levels of market coordination or higher levels of strategic coordination, estimated entrepreneurship rates are higher than they are when there is more variation in the types of institutional complementarity present in the political economy. Thirdly, aggregate performance of entrepreneurship is moderated by the institutional configuration of the political economy. Institutional coherence identified by this perspective appear to offer general efficiencies. Therefore, these results suggest that institutional explanations of entrepreneurship can be explained by ‘equifinality’, in that a ‘perfect’ institutional setting does not exist.

Table of Contents

List of Figures	xiii
List of Tables	xv
1 Introduction	1
1.1 Background to the Research	1
1.2 Statement of the Problem	4
1.3 Research Aims & Objectives	8
1.4 Structure of the Thesis	12
2 Review of the Literature (Part 1): <i>Institutions & Institutional Perspectives</i>	14
2.1 Introduction	14
2.2 Understanding ‘Institutions’	15
2.3 Understanding Long-Run Economic Development: <i>A Role of Institutions</i>	19
2.3.1 Operationalising Production Factors	21
2.3.2 The Mobilisation of Society for and in Development	23
2.3.3 The Entrepreneur, Knowledge, Innovation & Institutions	25
2.4 Plurality of Institutional Approaches	29
2.4.1 New Institutional Economics (NIE)	31
2.4.2 New Organisational Institutionalism	35
2.4.3 Comparative Political Economy & Comparative Institutionalism	39

2.5	Comparative Institutionalism: <i>Intra-Diversity of Approaches</i>	45
2.5.1	Varieties of Capitalism (VoC)	48
2.5.2	National Business System (NBS)	53
2.5.3	Governance Approaches	58
2.6	Chapter Summary	60
3 Review of the Literature (Part 2): <i>Institutions & Comparative</i>		
	<i>International Entrepreneurship</i>	62
3.1	Introduction	62
3.2	Entrepreneurship & Economic Growth	63
3.3	Conceptualising National Level Entrepreneurship	66
3.4	Perspectives in the Role of Institutions on Entrepreneurship	68
3.5	Institutional Approaches in Entrepreneurship Studies	71
3.5.1	New Institutional Economics & Entrepreneurship	72
3.5.2	New Organisational Institutionalism & Entrepreneurship	80
3.5.3	Comparative Institutionalism & Entrepreneurship	85
3.6	Moving ‘Institutional Explanations’ Forward	91
3.6.1	<i>Converge</i> versus <i>Diversity</i> Institutional Perspectives	91
3.6.2	Application of Institutional ‘ <i>Diversity</i> ’ Perspectives	94
3.7	Orienting This Study	97
3.7.1	‘Reconceptualising Institutional Approaches to Comparative In- ternational Entrepreneurship’	97
3.7.2	Comparative Institutionalism, Institutional Complementaries & Functional Equivalentents	99
3.8	Theoretical & Empirical Framework	111
3.8.1	Towards an Institutional Diversity Perspective on Entrepreneur- ship: <i>An Institutional Configurational Framework</i>	111

3.8.2	Institutional Sub-Spheres & Total Entrepreneurial Activity . . .	120
3.9	Chapter Summary	125
4	Methodology	127
4.1	Research Questions	128
4.2	Research Approach	129
4.3	Philosophical Foundations	131
4.4	Research Design	136
4.4.1	Step 1: Institutional Capitalist Diversity	140
4.4.1.1	Factor Analysis: <i>Principal Components Analysis</i>	140
4.4.1.2	Sample & Data Structure	145
4.4.1.3	Manifest Variables	147
4.4.1.4	Cluster Analysis	148
4.4.2	Step 2: Multivariate Panel Analysis	150
4.4.2.1	Rationale for Panel Analysis	150
4.4.2.2	Hypotheses	151
4.4.2.3	Variables	156
4.4.2.4	Control Variables	166
4.4.2.5	Data Structure	169
4.4.2.6	Model Specification & Estimation Strategy	171
4.5	Chapter Summary	178
5	Research Findings (1): <i>Institutional Capitalist Diversity</i>	179
5.1	Introduction	179
5.2	Principal Components Analysis	181
5.2.1	Product Markets	182
5.2.2	Labour Markets	185

5.2.3	Education System	188
5.2.4	Financial System	190
5.3	Overview of Institutional Factors	193
5.4	Diversity of Economic Models	194
5.4.1	Cluster Analysis Descriptives	195
5.4.2	Four Modes & Nine Intra-Modes of Capitalism	198
5.4.3	Institutional Cluster Descriptive Statistics	201
5.4.4	Institutional Cluster Configurations & Features	202
5.4.5	Institutional Complementarities	210
5.4.6	Coherent & Incoherent Models of Capitalism	215
5.5	Chapter Summary	218
6	Research Findings (2): <i>Institutional Diversity, Functional Equivalence & Aggregate Entrepreneurship - Multivariate Panel Analysis</i>	219
6.1	Introduction	219
6.2	Hypothesis & Model Specification Summary	220
6.3	Descriptive Statistics	222
6.4	Validating the ‘Institutional Complementarity’ (IC_i) Measure	224
6.5	Diagnostic Analysis	227
6.6	Estimation Results	229
6.6.1	Main Estimation Results	229
6.6.2	Institutional Coherence: <i>Linearisation, Estimation & Related Comparative Performance of Coherent Complementarities</i>	240
6.6.3	Robustness Analysis	243
6.7	Summary of Support for Hypotheses	248
6.8	Chapter Summary	252

Table of Contents	xii
7 Discussion	253
7.1 Introduction	253
7.2 Overview of Findings	254
7.2.1 Institutional Capitalist Diversity	256
7.2.2 Institutional Diversity, Functional Equivalence & Aggregate Entrepreneurship	261
7.3 Contributions to Theory	270
7.4 Contributions to Public Policy	282
7.4.1 Structural Reform and the (in)coherence of institutions: <i>Implications for ‘How Governments Should Reform’</i>	283
7.4.2 Dynamic Bifurcation, Aggregate Entrepreneurship & Reform for Institutional Efficiencies: <i>Marginal Productivity of Institutional Change</i>	292
7.5 Conceptual Framework	304
7.6 Chapter Summary	307
8 Conclusion	309
8.1 Introduction	309
8.2 Thesis Summary	310
8.3 Thesis Contributions	314
8.4 Limitations of the Study	322
8.5 Directions for Further Research	326
References	335
Appendix A Estimation Equations	364
Appendix B Variable Classification	368

List of Figures

2.1	Institutions and Economic Development	28
2.2	Plurality of Institutional Approaches	30
3.1	Conceptual Map of Institutions - Entrepreneurship Relationship	119
4.1	Methodological Approach	137
5.1	Diversity of Economic Models: Dendogram	197
6.1	Estimated Relationship between Institutional Diversity, Coordination & Aggregate Entrepreneurship	237
6.2	Estimated Relationship between Institutional Diversity, Coordination Means & Aggregate Entrepreneurship	239
7.1	Institutional Environment and Entrepreneurship: Findings	269
7.2	Quadratic Estimation Marginal Partial Derivative: <i>Marginal Productivity of Institutional Coherence</i>	294
7.3	Institutional Coherence and Equilibrium Dynamics	301
7.4	Conceptual Framework	306
B.1	Manifest Variables: Labour Market	370
B.2	Manifest Variables: Product Market	371
B.3	Manifest Variables: Education System	372
B.4	Manifest Variables: Financial System	373

B.5 Proximity Matrix: Institutional Diversity & Typologies 374

List of Tables

2.1	Diversity of Institutional Approaches	44
2.2	Diversity of Comparative Institutionalism Literature: <i>Capitalism as Varied Institutional Regimes</i>	47
2.3	Institutional Dimensions of Leading Models of Comparative Institutional Analysis	60
3.1	Diversity of Institutional Approaches to International Entrepreneurship	90
3.2	General Features of Coherent Political Economies	104
3.3	Institutional Dimensions of Leading Models of Comparative Institutional Analysis: Institutional Sub-sphere Operationalisation	107
4.1	Central Features of Subjective & Objective Research	132
4.2	The Four Paradigms of Social Science Research	133
4.3	Paradigms in Social Science Research	134
4.4	Overview of Panel Data Variables	170
5.1	PCA Component Matrix: Product Markets	184
5.2	PCA Component Matrix: Labour Markets	187
5.3	PCA Component Matrix: Education System	189
5.4	PCA Component Matrix: Financial System	191
5.5	Overview of Factors	193
5.6	Cluster Classifications	199

5.7	Cluster Anderson-Rubin Factor Score Means	203
5.8	Complementarity Matrix - Market Based Capitalism	211
5.9	Complementarity Matrix - Coordination Based Capitalism	212
5.10	Coherent versus Incoherent Models	216
6.1	Summary Statistics	223
6.2	Bivariate Correlation with Hall & Gingerich 'Institutional Complementarity' Term	226
6.3	Regression Results (1)	231
6.4	The Impact on TEA of Institutional Diversity & Complementarities	232
6.5	Removed Variables	245
6.6	Robustness of Regression Results to the Exclusion of Specific Variables	246
6.7	Robustness Estimates of Stationary Cross-Sectional Equations	249
6.8	Summary of Support for Hypotheses	251
7.1	Capitalist Variety versus Hall & Soskice Classification	257
7.2	Dynamic Structural Reform Interaction Matrix: Increasing Coherence for Market Based Coordination	288
7.3	Dynamic Structural Reform Interaction Matrix: Increasing Coherence for Non-Market Based Coordination	289
B.1	Overview of Country Samples	369

Chapter 1

Introduction

1.1 Background to the Research

The rate of entrepreneurial activity differs considerably across nations (Verheul et al, 2002) and a growing volume of literature in comparative international entrepreneurship has focussed on exploring the factors that explain these differences. The entrepreneurship literature started to explore these issues in the early 1990s, stating that the manner in which a society's institutional structure economic payoffs influences the nature of entrepreneurial efforts and activities (Baumol, 1990; Sobel, 2008; Acs et al, 2018). Over the years, a consensus in debate has emerged that formal and informal institutions incentivise individuals behaviour (North, 1991), thereby influencing the extent and structure of an economy's entrepreneurial activity (Acs et al, 2008; Urbano & Alvarez, 2014). Given entrepreneurs are embedded within an institutional context, Zahra & Wright (2011) argue that 'the characteristics of the external environment in which new ventures are established and compete' can help explain 'the birth-rate, magnitude and

types of opportunity and how entrepreneurs exploit them for profit' (Zahra & Wright, 2011, p. 76). The study of the varied institutional context can therefore help explain the variation of international entrepreneurial levels between countries (Syliowicz & Galvin, 2010).

During the last decades, the role of entrepreneurship has been the object of increasing attention from researchers and policy-makers. Entrepreneurship has been acknowledged as the key driving force for the incredible growth miracle of capitalism (Wennekers & Thurik, 1999) against the backdrop of the rising share of employment in SMEs (Loveman & Sengenberger, 1991). According to Reynolds et al (1999) and Zacharakis et al (2000), about one-third to one-half of the differences in national growth rates can be explained by variations in entrepreneurship rates. The change in the relative importance of SMEs has been ascribed to a new era of industrial structure brought about by changes in technology, where the role of entrepreneurship has been re-evaluated as central to economic development and growth (Audretsch & Thurik, 2001; Wennekers & Thurik, 1999). In particular, entrepreneurship stimulates innovation, job creation and economic growth (Acs et al, 2012; van Praag & Versloot 2007; van Stel et al, 2005). As such, an important reason to study entrepreneurship is given its prime role in the process of growth and development (Carlsson et al, 2013).

Ascribed in part to a lack of technological growth and dynamism, the fall of command based economic systems has further illuminated the role of the entrepreneur. For Schumpeter (1942), entrepreneurship is vital in creating dynamism that command based economies lacked. The creation and prominence of market based economics has opened up opportunities for individual entrepreneurs to act, and furthermore, entrepreneurs are now seen as an essential agent of change and structural adjustment. The entry of new firms was crucial for removing distortions in the supply of goods and

services, increasing competition, and encouraging innovation. Due to these economic changes, research on entrepreneurship has grown and policy makers have become increasingly interested in discovering how to create a supportive environment for entrepreneurship (Dilli, Elert & Herrmann, 2018). This is largely given entrepreneurship can be expected to vary both over time and across countries.

It was from this regard that scholars seek to identify the key drivers and antecedents with regards to promoting and supporting entrepreneurship, at both the regional and national level. From this perspective, researchers identify that ‘entrepreneurs do not operate in a vacuum’, but rather they are constrained and enabled by their institutional environment (Estrin et al, 2013; North, 1990; Aldrich, 2011). Institutions affect and incentivise individual behaviour, thereby the extent and productive character of an economy’s entrepreneurship and, consequently its economic development (Baumol, 1990; Acs et al 2008, Urbano & Alvarez, 2014). According to Wennekers et al (2002), culture and institutional variations seem to be very important for explaining cross-country variations in entrepreneurship.

While it has been acknowledged that the institutional environment is a crucial factor affecting entrepreneurship (e.g. Baumol, 1990; Busenitz et al, 2000; Wennekers et al, 2002), there is less agreement about which institutions matter, and more importantly, in what ways do they matter. As it goes, "institutional theory remains characterised by an eclectic set of approaches" (Jackson & Deeg, 2008, p. 540). Given the plurality of institutional approaches, how entrepreneurship scholars employ institutional theory has important implications for which and how institutions matter for entrepreneurship.

1.2 Statement of the Problem

Much of the research focussed on explaining the influence of institutions on entrepreneurship has taken a specific and *narrow* approach to institutional theory. Entrepreneurship research has, for example, emphasised the rule of private property rights, rule of law, and economic freedom (e.g. Acemoglu & Johnson, 2008; Estrin et al, 2013). Deemed as formal institutions, these studies have tended to emphasise the New Institutional Economics (NIE) theory of institutions. This views institutions as ‘*converging*’ creations which posit a theoretical ‘one-best-way’, which is largely seen as liberal and non-interventionist (Allen & Aldred, 2012; Rodrik et al, 2004). This is also referred to ‘unifinality’, in which across the variety of possible institutional arrangements there exists an optimal configuration of institutions for economic performance (Fiss, 2007). This approach to institutional theory overlooks the nuanced *diversity* of the institutional environment which defines the architecture of capitalist political economies. For example, Sweden and the UK have similar rule of private property rights, yet are fundamentally different in terms of their institutional configuration; they demonstrate ‘*varieties of capitalism*’. How one defines institutions therefore has important implications for how institutions matter for entrepreneurship.

Overlooking approaches positing institutional diversity has led entrepreneurship studies to adopt a ‘*narrow*’ definition of institutions. This definition of institutions is favoured over a broader definition that incorporates a greater range of institutions as defined by their relative diversity, functional equivalence and complementarity. This broader definition of institutions can be taken by blending theory from the ‘comparative institutionalism’ institutional camp, rather than solely focussing on New Institutional Economics (NIE) and New Organisational Institutionalism (NOI)

approaches. Comparative institutionalism strives to identify, classify and evaluate the distinctive configurations of institutions that characterise political economies. Comparative institutionalism therefore sees institutions as *divergent* creations.

The difference between the two institutional approaches (comparative institutionalism versus NIE/NOI) is theoretically important for comparative international entrepreneurship given several reasons. Firstly, the inclusion of a wider set of institutions within entrepreneurial analysis, together with a theoretical framework that specifies how the institutional environment provide genuine efficiencies to economic agents, arguably allows comparative institutionalism led approaches to provide a richer explanation of how, where and why entrepreneurs act. Secondly, one of the main theoretical tenets of the comparative institutionalism literature is the nature of institutional diversity which defines the architecture of political economies. It assesses the conditions under which political economies are likely to continue to have divergent sets of institutions. Allowing the study of how institutional diversity across many domains of the economy has an impact upon the types, levels and nature of entrepreneurial activity. The capabilities and actions of entrepreneurs are strongly shaped by the configuration of institutions within which they operate, and the configuration is unique to every country (Amable, 2003; Ebner, 2010; Yeung, 2002). Thirdly, the comparative institutionalism literature differentiates in the sense it highlights the nature of institutional complementarities. Institutional complementarity is where the presence of one institution increases the efficiency of another. Individual institutions may interact with one another to reinforce a specific institutional logic, which then alters the actions of agents. There is not a consideration of institutions as single stand-alone entities, but as complementary configurations that shape a dominant pattern of economic coordination.

In sum, comparative institutionalism literature is defined by institutional diversity, illuminating a wider set of institutions which potentially combine to provide unique forms of economic action. It promotes a parsimonious, configurational view of institutions and the institutional environment. It can address the relative insufficiencies of using narrow, convergent approaches to institutions, which, for example, could unnecessarily suggest unifinality of institutions and their entrepreneurial outcomes.

Consequently, entrepreneurial activities within economies are embedded in a distinct socioeconomic order, as so is the articulation of entrepreneurship shaped by institutional complementarities that specify the corresponding variety of capitalist and their complementary sub-system (Ebner, 2010). The dominance of New Institutional Economics approaches, which focuses on institutions as narrow and converging creations does not allow for the configurational enquiry of the overall institutional environment. Comparative institutionalism allows an integrated multidisciplinary configurational approach to theorising about institutions, offering more explanatory power than the examinations of individual and singular effects.

Therefore, the intent of this study is to empirically understand institutional *diversity* across countries and its potential impact on entrepreneurship. The main justification for conducting this research stemmed from several important gaps identified in the comparative international entrepreneurship literature. These concerned: (a) the relative neglect of a ‘comparative institutionalism approach’ and, more specifically, the lack of theoretical emphasis of national institutional system thinking via Governance approaches; and (b) overlooking the conception of key comparative institutionalism themes such as (i) institutional diversity, (ii) institutional complementarities and its configurational approach, and (iii) institutional coherence. At its crux, there is a

need to move away from *convergent* views of institutions, to applications which sees institutions as *divergent* creations.

In this study, it is argued that comparative institutionalism perspectives provide a better form of entrepreneurial analysis for several reasons. Firstly, the study can analyse institutional diversity, drawing on the potential for functional equivalence and equifinality. Secondly, the study can account for institutional complementarities, and the diversities they may take. Thirdly, given the divergent nature of institutions, regression analysis should be tested with non-linear estimates. This way one can analyse whether there is a ‘perfect’ ‘one best way’ of institutions (linear), or rather levels of entrepreneurship will be similar yet within diverse institutional configurations, hereby functional equivalents (non-linear). After all, perspectives from comparative institutionalism have hardly been applied in entrepreneurial research (Herrmann, 2019).

Taking an ‘institutional configuration’ approach, this study poses the question of ‘do the different institutional configurations in different capitalist political economies influence the volume of entrepreneurship?’ Therefore, the aim of this study is to explore the influence of national institutional environments on the levels of entrepreneurship. The proposed study seeks to explore this issue from a cross-disciplinary stance, drawing upon research from the disciplines of political economy, comparative institutionalism and international entrepreneurship. The proposed methodological approach involves a sequential methodology design, comprising: (1) the exploration of factor analysis defining institutional diversity among groups of countries; then (2) A panel model analysis to explore statistical relationships across i and t of institutional factors and aggregate entrepreneurial performance among these different groupings. This way, the study allows the provision of a greater contextual understanding of institutional

influences on entrepreneurial activity, reflecting the complexities and mechanisms of social processes with broader yet parsimonious methodological perspectives.

1.3 Research Aims & Objectives

The intent of this study is to empirically understand institutional diversity across countries and its potential impact on entrepreneurship. This approach, subsequently, provides a justification for the main research aim to be elaborated and divided into more specific research objectives. For reasons of establishing methodological rigour, enhancing the credibility of the finds and providing a stronger basis for theoretical development, and also in responding to the call for cross-country comparative research in the context of international entrepreneurship literature (Welter, 2011), the decision was made to focus on a large selection of OECD countries through the lens of quantitative assessment.

The aim of this study is to explore the influence of national institutional environments on the levels of entrepreneurship. This is achieved by pursuing the following objectives:

Research Objective 1:

To ascertain whether capitalist institutional diversity exists, and if so, how can diversities be characterised between political economies.

Research Objective 2:

To ascertain the effects of institutional diversity on aggregate entrepreneurship.

Research Objective 3:

To ascertain whether perspectives from comparative institutionalism can explain the divergent nature of entrepreneurial activity across nations.

In order to meet these three objectives, a two step/stage quantitative study was used, incorporating principal components analysis (factor analysis) followed by a subsequent panel analysis through two estimation strategies. Given the limited knowledge of the potential influence of national institutional environments and their subsequent functionalities, the comprehensive approach adopted here is appropriate, particularly due to greater alignment with the pursuit of objective reality, given the subsequent methodology employed, embedded in a positivist research paradigm, as compared to more restrictive single method studies.

This methodological approach has been selected to answer the following research questions:

Research Question 1:

Does capitalist institutional diversity exist and if so, how can diversities be characterised between political economies?

Research Question 2:

What are the effects of institutional diversity on aggregate entrepreneurship?

Research Question 3:

Can perspectives from comparative institutionalism explain the divergent nature of entrepreneurial activity between nations?

This research adopts a quantitative, deductive approach to explore the composition and influence of institutions on aggregate entrepreneurship performance in 29 OECD countries. It is therefore concerned with testing hypotheses by examining the relationship among variables. This study takes forward the claim that understanding aggregate entrepreneurship, embedded within specific institutional contexts, can best be explained by advancing the relationships among variables posed using questions and hypotheses (Davidsson, 2008).

This study utilises a quantitative approach with two sequential sections. The results of the first quantitative section are used to underpin the second quantitative section. Specifically, the variables created in the first section are those which specify the econometric models of the second section.

The first quantitative section comprises of a principal components analysis and then a discriminant variable analysis in the form of a hierarchical ascending cluster analysis. The purpose of this factor analysis technique is to develop robust quantitative variables which proxy for the institutional environment within countries. The data used within the principal components analysis comprises of 42 manifest variables collected from numerous online secondary data sources. This data is enriched with databases that contain certain information on labour market structure, financial system depth and education spending on a relatively large set of countries. Consequently, to maintain consistency, validity and scope from such a multiple source approach, the analysis is

performed on 30 countries which are all members of the OECD as collected from 2010 to 2015. Cluster analysis is then performed on these developed variables. This outlines the optimal similarities and dissimilarities between countries, which clusters countries into groups. This classifies the institutional diversity between countries and contributes to the comparative institutionalism literature.

The second subsequent section used a multivariate panel analysis. Using the institutional factors created in the first section, this section tests several econometric model specifications outlining the statistical relationship between institutions and the levels of international entrepreneurship within 29 countries¹. Departing from the narrow definition of institutions, the factor and cluster analysis underlines the diversity of political economies which are built upon unique configurations of institutions. In the second section, these factors are used to create coordination indices for each institutional sub-sphere, which highlights the degree of non-market coordination present within institutional sub-spheres. To account for institutional complementarities, this section creates an interaction term which measures the institutional form of each country. These measures then form the data specification of the panel models. Amongst a backdrop of control variables, this study aims to test the relationship between institutional complementarities and aggregate entrepreneurship performance. Specifically, this section uses time varied dependant and control variables between 2010 and 2015. The number of observations is therefore 145². This section then employs a range of robustness analysis to test the reliability of the empirical findings.

The rationale for this approach is that the quantitative data and their subsequent analysis provide a general understanding of the research problems. Given this study has

¹New Zealand had to be dropped given the removal of its GEM TEA data

²Given the inclusion of a distributed lag model for purposes of endogeneity, the specification loses one year.

identified literature gaps in the underutilisation of certain institutional approaches, this study will use a quantitative approach and the subsequent results opens the domain to a potential multitude of methods. Quantitative approaches are largely exploratory in this regard. The research agenda takes a different institutional approach to the current entrepreneurship literature, and quantitative methods allows the study to test fresh theoretical arguments within a set of established rules.

1.4 Structure of the Thesis

This thesis comprises seven chapters.

Chapters two and three present a view of the relevant academic literature in two parts. Chapter two reviews the streams of literature most relevant to considering the (a) concept of institutions, (b) context of institutions and (c) plurality of institutional theory. The width and plurality of institutional approaches to entrepreneurship however represents the main guiding literature to this thesis, particularly in relation to the narrow blend of institutional theories in comparative international entrepreneurship studies lends the main literature void.

Chapter four discusses the research approach and methodology employed to carry out the empirical research for this study. The chapter outlines the choice of research methods and provides details of the two methodological steps. In detail, it documents the data specification, hypotheses and model specifications.

Chapter five, which is the first of two results chapters, presents and analyses the results of the principal components analysis (PCA) and the subsequent cluster

analysis relevant to Objective 1. The first objective is to ascertain whether capitalist institutional diversity exists, and if so, how can diversities be characterised between political economies. To address this objective, the chapter conducts several principal components analysis within the institutional sub-spheres as outlined by the 'governance approach' to comparative institutionalism (Amable, 2003).

Chapter six, which is the second results chapter, presents the estimation technique and estimation results of the panel model in relations to Objective 2 and 3.

Chapter seven extends and discusses the key findings of the quantitative analyses presented in chapters five and six. It discusses, through the use of headline findings, the depth of the analysis and the wider contributions. Specifically, this chapter divides the contributions into theoretical and public policy implications.

Chapter eight develops conclusions and summarises the remit of the thesis and its key contributions. It provides a thesis summary, where it restates the key gaps and explains addressing the three specific research objectives led to achieving the main aim of the study.

Chapter 2

Review of the Literature (Part 1):

Institutions & Institutional

Perspectives

2.1 Introduction

This chapter provides the first part of the literature review with a focus on institutions and institutional theory. Relating to the boundaries of institutional thought, it draws both upon the conception of institutions and the plurality of institutional theory to address the main research agenda. Specifically, whilst institutional theory has become an attentive agenda in entrepreneurship literature, it largely overlooks the simple differences in institutional environments. Indeed, narrow conceptions of institutions are taken. This chapter provides a discussion of the wider literature on institutions, highlighting the varied ‘approaches’ to institutional theory, and importantly, how this

can define the theorized impact of institutions on economic outcomes. It is argued that particular institutional approaches provide a unique theoretical lens for understanding the institutional environment and their analysis for potential influence. The aim of this chapter is to provide an understanding of ‘institutions’, theorizing its impact within the context of economic agency, whilst outlining the plethora of potential institutional approaches. This will frame the ‘understanding of institutions’ and their constituent approaches within the context of this research study.

2.2 Understanding ‘Institutions’

It is impossible for people to interact with one another in the absence of shared understanding about how others will respond and the efficacy of sanctions aimed at mitigating the negative externalities of potential opportunist behaviour (North, 1987; 1991; Hodgson, 2007). Economic agents will only transact if they have trust and confidence that their expectations will be met. Exchange between agents, which is often repetitive and numerous, is required to be predictable, frictionless and secure. Indeed, exchange requires ‘transactional trust’. As such, human interactions, both economic and non-economic, depend on forms of confidence underpinned by rules and regulations securing against unpredictable and opportunist behaviour. Born from institutional theory, these rules and regulations are referred to as ‘institutions’.

Institutional theory has become a prominent field of interest within social sciences, proving a fresh analytical perspectives for various scholars of economics, sociology and political science. Whilst institutional thought has been applied in varied manners, institutional theory provides its main foci in relation to its explanation and examinations

of the wider economic, social, cultural environment and their impact on behavioural and economic outcomes (Scott, 2008; Kenworthy, 2006; Jackson & Deeg, 2008; Hodgson, 1998; 2001). In this manner, institutional theory has offered a new perspective to many maturing social sciences, challenging ingrained arguments which have become the 'manufactured' norm in mainstream disciplines such as (neoclassical) economics (North, 1990; Hodgson, 2001). The economy is a complex, evolving system and the neoclassical economics notion of equilibrium remaining a durable state provides institutional theory with natural points of distinction (Chang, 2007; Rodrik 2008).

Depending on its use, the term 'institutions' does not always attach the same meaning for researchers. Though central in its theorised claims, definitions and interpretations of the term remain varied and diffuse, largely dependent on its disciplinary context. Institutions as a concept are broad, diverse in its meaning and therefore mostly troublesome (Jackson & Deeg, 2019; Redding, 2005). Unfortunately, there is no agreed way of defining 'institutions'. Therefore, in providing a clearer understanding of the term 'institutions', a brief examination of the central themes, concepts and insights are given from the three major scholarly areas of its use, that is economics, sociology and political science. It is from these three disciplines that provide the core momentum behind the 'neo-institutionalist' approach to institutional theory. This contrasts the much critiqued and challenged wave of 'old institutional theory', developed upon the work of Veblen (1898).

It is within economics that institutions have provided a considerable contribution. Developed from the evolving perspective of 'New Institutional Economics' (NIE), rooted in the works of Coase (1937), North (1990) and Williamson (1975), highlights the function and role of institutions in the economic system. In economics, it is acknowledged that institutional factors play a key role at all levels in the economy, from the structure

and functions of the firm, through to the operation of markets and onto the varied forms of state intervention (Hodgson, 1988). From this perspective, institutions are “humanly devised constraints, informal constraints, and their enforcement characteristics” (North, 1994 pg. 360). Institutions comprise of written and unwritten rules, norms and constraints that humans devise to reduce uncertainty and control a given environment, thus defining the ‘incentive structure’ of economies and societies. Such structure is underpinned by (i) written rules and agreements governing contractual relations and corporate governance, (ii) laws, constitutions and rules that govern society and the functions within it; government, politics and finance, (iii) unwritten codes of conduct, beliefs and norms of behaviour. Here, institutions are the “rules of the game” (North, 1990), formal and informal, which are often taken with a pro-market rhetoric (Rodrik, 2006).

Sociologists takes a varied perspective to institutions, as established by their ‘new organisational institutionalism’ approach. A field developed from the core of organisational theory and sociology, this perspective focuses on organisational forms and practices rather than the national level ‘rules of the game’. By reinterpreting economic action as social action, sociology similarly emphasises the persuasiveness and importance of social institutions in economic life. Here, institutions are established ways of acting and transacting stemming from shared ‘regulative, cognitive and normative frames’ (Morgan & Kristensen, 2006). The sharing across organisations of common rules, traditions and norms provide the institutionalisation of organisation forms, ultimately because it provides a reward. Conformity or ‘institutional isomorphism’ (DiMaggio & Powell, 1983) increases organisational legitimacy, rents from resources and transactions that ultimately extends the survival of the organisation (Meyer & Rowan, 1977). These institutionalised behaviours are guided by normative pressure and

cognitive thought systems (Scott, 1995; 2008) rather than through NIEs perspective of formal institutions.

Political scientists take an alternative institutional approach with two sub-disciplines. One, 'comparative governance' and two, 'political economy' provide two disparate views on the political scientist's approach to institutions. For the comparative governance approach, institutions are "legal frameworks and administrative arrangements characterising particular governance structures" (Scott, 1995, p. 6). In this view, institutions are seen in the context of 'governance', which take varied forms in terms of their constitutions, bureaucracies, parliamentary norms and legal methods. It is these components which constitute the governance structures which impact political, social and business behaviours.

In contrast, 'political economy' based political science approaches vary where the domain of 'comparative institutionalism' (also referred to as comparative capitalism) focuses on the institutional effectiveness of the constituent institutional sub-spheres which form the economic environment. That is, comparative institutionalism approaches seek to explain and describe diversity in the socioeconomic institutional architecture of countries. Formally, political economy approaches seek to identify the large intrinsic diversity amongst capitalist countries, and thus institutions are seen as 'distinct national configurations that generate a particular systemic logic of economic action' (Hall & Soskice, 2001; Jackson & Deeg, 2008; Hotho, 2014). Capitalism takes varied institutional forms and configurations. It is the national differences in institutional organisation that influence political, social and economic actions (March & Olsen, 1996). From this perspective, institutions matter because societal institutions provide unique resources, competencies and practice norms to agents operating within such arena. It is, however, the diversity of these 'institutional configurations' that encourage

unique yet divergent economic and technological specialisation patterns (Hall & Soskice, 2001; Allen 2013).

Whilst varied definitions of institutions exist, conformity is evident in the sense of the overarching impact of such structures. They fundamentally ‘enable and constrain’ activities of agents, whether that be firms, individuals or nation-states. Institutions provide general incentive structures which facilitate economic, social and political interactions, despite being classified in diverse ways and at varied levels. In doing so, they create incentives for certain courses of action, and by so act as vehicles of both structure and change (Boettke & Coyne, 2009; Noseleit, 2013). It is, however, the plethora of varied institutional definitions and meaning that provide researchers with the potential plurality of institutional analytical approaches. The chapter will now move forward with these definitions to understand the functional importance of institutions in social systems. This will help illuminate why the theme of institutions is fundamental where attempting to understand context.

2.3 Understanding Long-Run Economic Development: *A Role of Institutions*

“The historical study of economic growth is, in fact, a study of institutional innovations that permit increasingly complex exchanges to be realised by reducing the transaction (and production) costs of such exchanges”

(Douglas North, 2008, p. 23)

Economic growth is a complex phenomenon. Economics, sociology and geography have long attempted to map and understand the asymmetry in the global experiences of growth and development. Challenging this complex causality has however left little consensus in favour of understanding the variances in global growth and development (North, 2005; Rodrik, 2008; Chang, 2007). Competing perspectives all yield varied explanations into the discrepancies of growth, and indeed, whether positive-sum global development can be achieved at all (Singer, 1950).

Perspectives on growth and development are now beginning to acknowledge the role of institutions, that is, ‘institutions matter’ (Rodrik, 2008; Rodrik et al, 2004; Tylecote, 2016; Hall & Jones, 1999; Reinert, 2007; Acemoglu & Robinson, 2001; Chang, 2007; Flachaire et al, 2014). The mainstream of the 20th-century neoclassical economics which has carried forth perspectives on economic growth has largely assumed that institutions are indeed exogenous variables with agents perfectly adjusting for them. At worst, they have been disregarded altogether. In candid perspective, North (1994, p. 257) argues that “...the neoclassical paradigm is devoid of institutions... The currently fashionable growth models of economists do not confront the issue of the underlying incentive structure that is assumed in their models”. This deficit is wholly inappropriate, given that market transactions are far from frictionless and costless. Institutions reduce the costs of coordinating human actions and therefore are of central importance in understanding human interaction (North, 1990); the divorce of such factor from explanations of growth is clearly unfitting. It is institutions that enable, constrain and retract economic development in spatially different ways, therefore illuminating the ‘geographically uneven development’ through the lens of institutional variance (Martin, 2003; Chang, 2007). Whilst scholars may identify that institutions do matter in the context of economic growth, there is little understanding of how they matter. This indeed is a deficit in itself, warranting an amplified understanding and

discussion into why they matter. To appreciate the primacy of institutions, this section will provide a framework for understanding the mechanisms for economic growth, thus theoretically underpinning (1) the growing need for the use of institutional thought and (2), overall context to the thesis.

2.3.1 Operationalising Production Factors

The mobilisation of capital (K) is a central factor of long-term growth under a duality of savings and net investment (Solow, 1956). An increase in capital per worker will generally lead to an increase in economic output, with capital enabling a sustained rise in the potential for productive efficiency, hence potential output (Solow, 1994). Capital stock is contingent on investment, which is a function of the available factors of production. As such, there is a required interplay of economic variables. Firstly, there should be an established postponement of consumption of income into savings; the opportunity cost of investment inaugurating the ‘savings sacrifice’. Secondly, such borrowing of these savings should be channelled into the installation of productive capital, namely machinery, business expansions and other neighbouring physical capital intended to spur capital formation and upgrading.

Indeed, capital (K) is a central component to growth, yet treating such in isolation again gives a narrow perspective on the growth process. Incremental increases in capital lead to a declining marginal productivity of capital (Solow, 1956; Caselli & Feyrer, 2007), similar to the recent experiences of the ‘Chinese miracle’ and its ‘vehicle’ of state capitalism (Hsieh & Klenow, 2009). In such respect, this matches the thoughts of Karl Marx where the central emphasis of private capital, and eventual investors

decline of profitable uses of capital will lead to a decline of the return on capital, and consequently the downfall of capitalism (Marx, 1867).

However, capital mobilisation is important, yet an unsatisfactory explanation of the process of economic growth, hence the introduction of ‘national production functions’, a relationship in which capital (K), labour (L) and technology (A); examples of inputs, are related to predictable amounts of output (Cobb & Douglas, 1928). As such, there can remain a distinction of how much economic growth can be attributed to changes in factor allocation, and thus contribution to advancing technology (A). Such neoclassical approaches had the clear advantage of signifying that the growth process, as argued by Marx (1867), need not be unstable or inevitably leading to declining rates of return. As the theory goes, advancements in technology lift the production function, which in turn, will drive economic growth (Romer, 1994). Such a nexus represents that technological progress, assuming matched with allocative and productive efficiencies, facilitates the conversion of inputs (K and L) into superior output. The subsequent changes in factor prices will also induce factor substitution; capital surpluses lead to the reduction of capital interests rates, and as such, cheaper capital can be utilised to a superior proportion to that on costly labour inputs (Lucas, 1988; Romer, 1994). This substitution effect will only be underpinned where technology has been recognised in explicit terms, given that the substitution interplay requires, and is a result of, changing technologies. As a result of this, much attention has been placed on technical innovation in explaining and facilitating economic growth (Reati, 2014; Toma et al, 2014; Wong et al, 2005; Romer, 1994).

2.3.2 The Mobilisation of Society for and in Development

The growing focal interest of technological innovation and progress lead many scholars and public policy to be directed towards the less tangible components of accelerated advancements, placing strain on what Becker (1962) coined as ‘human capital’; the predominance of knowledge, education and the acquisition of skills (SK). Stressing the role of capital accumulation thus requires attention to rising productivity levels, and as such, developing the human capital of society is needed to ensure that growing capital stocks would lead to the intended increase in output (which is levered by technology) (Adams, 1990; Schultz, 1961). The improvements in people and organisation through facilitating technical, skill and knowledge would ensure superior efficiency in the key components of growth; labour and capital.

Whilst natural resources (NR) has always remained a key factor for explaining potential growth, despite the often coined ‘resource curse’ (Ross, 1999; Mehlum et al, 2006) and ‘Dutch disease’ (Fardmanesh, 1991); the contribution of imminent scarcity and exhaustion of some resources (Meadows et al, 1972) has been argued to have facilitated the basis of knowledge accumulation. Taking the view of ‘resources for growth’ argument differently, the paucity and rising prices would lead to a mobilisation and reallocation of capital and effort resulting in the procurement of knowledge for new geological methods of extraction, or methods of economisation of viable present or new resources (Neumayer, 2000; Solow, 1997; Hartwick, 1990). This facilitates the acquisition of skills and knowledge, potentially creating fresh avenues for and of economic growth (Beckerman, 1974).

Thus, human capital of skills, knowledge and know-how (SK) is the dominant leitmotif for underpinning and leveraging the required factor of technology (TEC),

which allows the efficient uses of labour, capital and natural resources (L, K and NR). However, how these factors are arranged within ‘an’ economic system of production (Coase and Wang, 2011; Coase, 1937) is essential for understanding the ‘still asymmetries’ of the developed-developing dichotomy, focusing on the structural composition (STR) of economic activity. Clearly here, the institutional architecture promoting the arrangement of activities remains integral, forwarding the voices of many prominent scholars (North, 1995; Acemoglu et al, 2005; Bardhan, 2005; Easterly & Levine, 2003).

Even more, the central components of macroeconomic growth, as identified beforehand, organically involve microeconomic structures, which change systematically with increasing income levels. In short, the micro-structure of the economy changes with both the ‘right’ institutional and macroeconomic conditions (dSTR) (Chang, 1994; Baumol, 1990; Karlsson & Karlsson, 2002). In particular for macroeconomic conditions, dominating norms of activity composition, such as ‘manufacturing’, is maintained as the crucial structure of arrangement over certain levels of national income (Rostow, 1992; Kaldor, 1961; Foellmi & Zweimuller, 2008). As economic growth accelerates and national income rise, services grow disproportionately fast (Felipe et al, 2012); thus, labour-intensive sources of arrangement attain the desired edge when incomes are low (institutions permitting), with capital and knowledge intensive sources of activity when incomes rise. Institutions matter here, with rigid structures potentially obstructing the level of structural change (dSTR) (Rodrik, 2007a; Kasper et al, 2012; Reati, 2014; Boettke & Coyne, 2009). This remains a relevant factor when explaining the current ‘Eurozone crisis’, and equipping the Economic and Monetary Union (EMU) with the architecture and conditions of sustainable growth (Hall, 2014; Hancke, 2007; Amable, 2009).

2.3.3 The Entrepreneur, Knowledge, Innovation & Institutions

The pre-eminence of knowledge in the process of growth coupled with the microeconomics of change (dSTR) ignites a clear avenue of novel thought. How does society produce useful knowledge? How is it created, tested, and most importantly, applied? The agent of this process remains the crucial lever of progress, that is, the entrepreneur. Entrepreneurship plays a significant role in initialising structural change, where the transition from traditional to the modern section is facilitated by the innovative capacity of individuals (Gries & Naude, 2010; Naude, 2009; Noseleit, 2013). Yet what motivates the entrepreneur to operationalize the beforehand production factors, attempt structural composition changes, risk potential uses of knowledge, and overcome market transaction costs? Drawing on the growing economic popularity of the ‘Austrian School of Thought’, who established the prevalence of market competition as a determinant and process for human knowledge (Hayek, 1937, 1978; Kirzner, 1973, 1997), innovation economics has attempted to theorise the importance of the entrepreneur. Indeed, they present consensus that the required significance of technological progress, knowledge and change is driven by the human agency of risk-taking and explorative thinking, but only where material incentive and the dynamics of market competition are present (Hayek, 1937; Kirzner, 1973; Wennekers & Thurik, 1999; Holcombe, 1998; McClland, 1961).

Parallel to these claims, economic history provides a further sufficient observation of the need for supporting structures. North (1992) and Acemoglu & Robinson (2008) take note of the technical and organisational advancements of knowledge within the industrial revolution. The structural developments, namely dSTR, were not sudden

endogenous sources of growth but had been encouraged by the incremental evolution of institutions favourable to both the exchange in markets (property rights; limited government) and capital accumulation (K, L and T). Scully (1991) demonstrated that in the absence of ‘transactional trust’, capitalist entrepreneurs had been unable to produce continual structural change and thus economic growth. Crucially, such agents relied on civil, political and economic liberties, such as those proposed by Adam Smith (1776), alongside the complimentary institutional architecture supporting mutual and transactional trust.

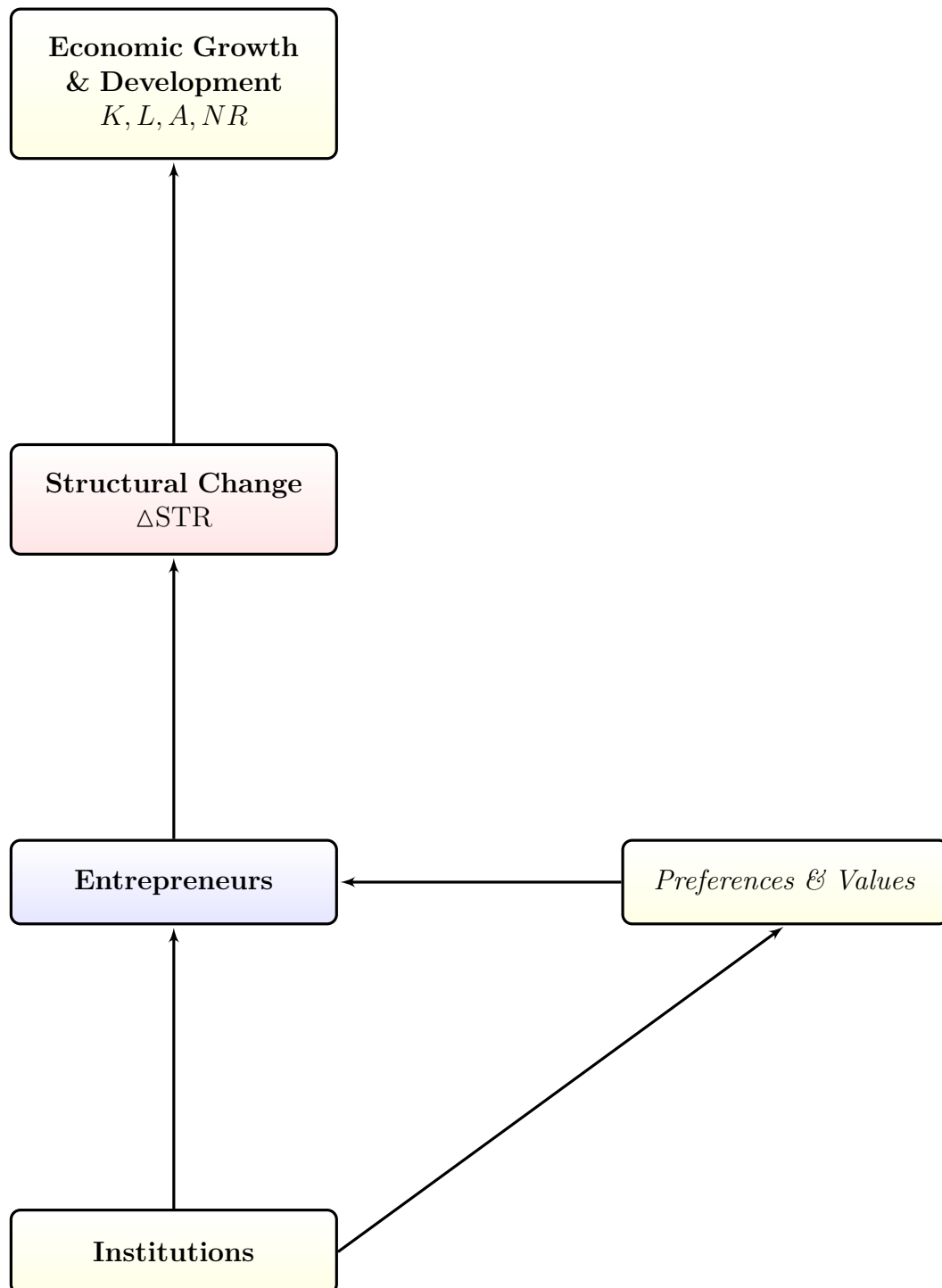
With comparable observation, Jones (1994) challenges why the remarkable progress of the Chinese technological base, namely the period of the Sung dynasty, failed to lead to an industrial revolution. In such hegemonic and closed economies, there was little rent seeking behaviour as the present political elite were not compelled to compete to entice and maintain the agents of enterprise and knowledge in their corresponding jurisdictions. Cultivation of attractive institutions for the entrepreneur and mobile capital was therefore unseeingly necessary. Put differently, insufficiencies in the institutional development of Asian economies neglected the leverage of technological progress and output gains of present structural changes (Jones, 1994), which should be facilitated by the innovative capacities of entrepreneurs.

All together, this demonstrates that growth is defined by the actions of entrepreneurs which are a product of their institutional environment. Entrepreneurship is regarded as a vital source of endogenous change in the economy (Terjesen & Wang, 2013; Noseleit, 2013), with institutions improving the pay-off structure of such activity (Boettke & Coyne, 2009). As summarised by Boettke (2005), “economic performance through time is a function of the incentive structures that economic actors face & the quality of the information these actors receive & can process, so as to respond effectively to

these incentive structures”. This in mind, persistent asymmetry in global economic growth rates cannot be explained with the continued academic ‘institutional deficits’. Human coordination in economies depends greatly on regular patterns of action on which people may rely. Such interaction of agents requires adaptive rules of interaction and coordination, which to define, are institutions. It is only with the aid of such rules and regulations can human coordination be augmented, with improvements in economic efficiency and living standards following.

Growth is driven by the focal point of knowledge, in which the entrepreneur remains the process catalyst. The absence of the entrepreneur undermines the effectiveness of the macroeconomic factors of growth (K, L, SK, TEC), given that knowledge remains the key condition for changing economic determinants. Reallocating resources to an institutional environment that supports entrepreneurship should, therefore, be a public policy imperative (Dewick & Hernandez, 2014). Entrepreneurial activities are only possible with the appropriate ‘rules of the game’, institutions constraining possible arbitrary and opportunistic behaviours in market human interactions. Global discrepancies in development depend on how the entrepreneurial propensity of individuals is channelled, which is dependent on the composition and quality of the existing institutional environment. Institutions matter for entrepreneurship, as enterprise matters for growth. Overall, scholars cannot ignore the institutional context. The interplay of these constituent sections has been conceptualised and can be demonstrated in Figure 2.1.

Fig. 2.1 Institutions and Economic Development



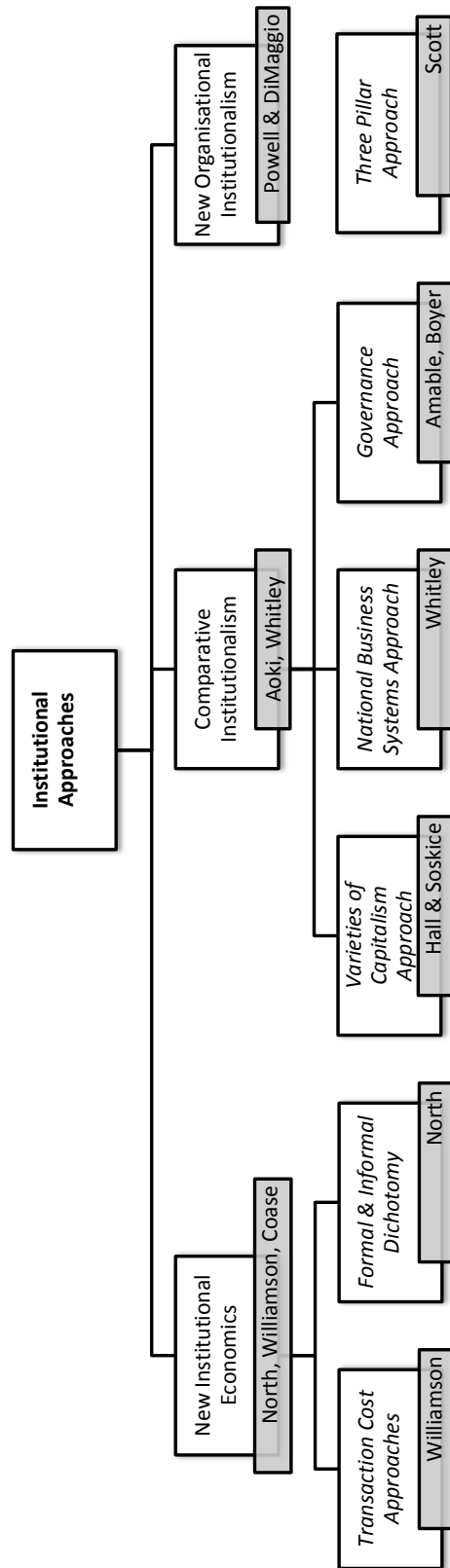
2.4 Plurality of Institutional Approaches

“...institutional theory remains characterised by an eclectic set of approaches”

(Jackson & Deeg, 2008, p. 540)

The foregoing discussions have highlighted the need to analyse institutions with the use of institutional theory. Yet treating institutional theory as a one-size narrow perspective gives a largely misguided understanding of the breadth and plurality of literature. From a theoretical point of view, it is possible to identify three broad categories of approaches to the study of institutional issues. These are as follows – *new institutional economics* approach, *new organisational institutionalism* approach and the *comparative institutionalism* approach. These can be visualised by Figure 2.2.

Fig. 2.2 Plurality of Institutional Approaches



2.4.1 New Institutional Economics (NIE)

Abandoning the standard neoclassical assumption that individuals have perfect information, unbounded rationality and the propensity for instantaneous market transactions, ‘institutional economics’ has introduced a rewarding contrast to the mainstream way of analysing economic systems. Here, institutional economics provides an alternative view; individuals have incomplete information and limited mental capacity as contingent on the ‘bounded’ information they possess. As a result, market individuals face uncertainty about unforeseeable outcomes and therefore incur ‘transaction costs’ to acquire information. To reduce the risks and costs associated with transactions, humans create institutions, regulations, laws, contracts – formal institutions – and belief patterns, habits of thought and cultural norms – or informal institutions. With the attempt to embed the analysis of institutions in economic thought, scholars gave birth to new methodological approaches within economics, to what we now coin as ‘New Institutional Economics’ (NIE).

Primarily developed notably by Thorstein Veblen (1898), Mitchell (1910) and Ayres (1944), these American based economists are considered the founding ‘fathers’ of what we now know as ‘old institutional economics’. It was these eminent economists that considered the framework of laws and thought trends inherent to individuals interaction within which determine economic behaviour. That is, institutions shape economic performance.

This central theme was introduced by the seminal work of Douglas North (1987; 1990; 1991), Oliver Williamson (1981) and Ronald Coase (1937; 1960) to become the key theoretical tenant of ‘New Institutional Economics’. As a way to provide a more integrated approach to the mainstream economics approach, NIE promoted the theme

of transaction costs. It is these costs that provide frictions to economic exchange, therefore play a fundamental role in shaping both production and transaction, and consequently economic outcomes (Coase, 1937; 1960; North 1990). More specifically, the reorientation towards analysing the frictions involved with economic exchange provided a view on the extent to which the assets involved are specific to a transaction. It is these ‘specificities of assets’ (asset specificities) that give birth to non-market transactions, specifically in the form of hierarchical exchange (e.g. firms). This gave microeconomics a more nuanced approach to understanding why firms are established and grow, the so-called ‘theory of the firm’. In return, NIE has emerged as a prominent heterodox approach by the way in which it challenges the core assumptions of the neoclassical theory. Here, markets are frictionless, the sole and only way to coordinate behaviour on a basis they provide perfect information to which all agents can transact with rationally.

Whilst NIE is primarily associated with the scholarly movement of Williamson (1981), North (1990) and Coase (1937), institutional economics has contributed significantly to neighbouring disciplines such as developmental and business studies. By emphasising the role of institutions and their theorised notion of shaping behaviour, NIE promotes a powerful and micro-analytical framework for the study of institutional influences within the realm of social science. Where standard approaches to economics are ‘static’, NIE supports a dynamic perspective to the study of economic life (Menard & Shirley, 2005), thereby significantly mobilising both economics and institutional theory for a more ‘operational’ use in separate disciplines (Hodgson, 2007; Dequech, 2002).

Formally, NIE studies institutions and how institutions interact with organisational arrangements. Here, institutions are the written and unwritten norms, rules and

constraints that humans devise to reduce uncertainty and control their environment (Menard & Shirley, 2005). They provide the “rules of the game in a society” (North, 1990, pg. 3), and therefore determine human agency in such a way as to coordinate the actions of society. At its analytical level, NIE suggests that the nature of exchange processes and a number of market ‘frictions’ are dependent on the institutional context in which they take place. For institutional economists, the institutional context (also referred to as the ‘institutional framework’, ‘institutional regime’ or ‘institutional environment’) refers to ‘one-best-way’ sub-institutions which regulate the economic behaviours of individuals and strategic ‘fit’ of organisations. Here, it is the systems of informal conventions and routines, coupled with the formal structures of regulation which constrain and control socioeconomic behaviour. Specifically, the extent to which the institutional environment guarantees private property rights and facilitates the efficacy of contracts affects the level of transaction costs (Williamson, 1975; Coase, 1937). It is the institutional context that “dictates the margins at which organisations operate” (North, 1990, p. 110), and therefore can be a useful point of observation when seeking to understand the actions of economic agents. From this perspective, the institutional environment can be seen as the set of overarching structures that establishes the basis for economic exchange and production (North, 1990).

To new institutional economics, institutions can be both *formal* and *informal* (North, 1990). Formal institutions include the role of constitutions, rules, regulations and contracts. Informal institutions comprise of norms, values, customs as influenced by more ‘stable’ patterns of culture and religion. While NIE acknowledges the existence of both formal and informal institutions, the application of NIE based principles has tended to focus on more formal conceptions. Specifically, there has been a large gravitation towards understanding how those rules and regulations affect the choice of governance arrangements through which economic activities are organised (Hotho & Pedersen,

2012). A key point of distinction here between ‘old institutional economics’ and ‘new institutional economics’ is that the Veblen (1898) view argues that institutions act as conditioners of individuality, rather than mere configurations for adaptive constraining. Individuals are assumed to shape their institutional creations independent of cultural preference (Mayhew, 2008) therefore treating informal institutions as constants. From the perspective of NIE, the institutional regime affects which governance arrangement provides the lowest form of exchange friction (hence most ‘efficient’), and therefore it can be argued that NIE provides a *converging* and ‘*narrow*’ view on institutions (Allen & Aldred, 2012). Because transaction costs are linear, naturally the institutions which provide the most efficiency will be seen as the ‘best’ institutions. This leads to the view that there is ‘one best set’ of institutions, which tend to be the more ‘market’ and ‘liberal’ orientations of formal institutions (Rodrik, 2008; Chang, 2007).

It is these ‘market’ orientated institutions that provide NIE with its main conceptual hook; these institutions influence economic performance and shape economic activities (Williamson, 1993). This is why NIE has often been synonymous with ‘liberalisation’ in public policies, given the ‘best’ institutions are the ones that provide minimal distortions to economic exchange, and thus maximising the productive efficiency of the economy. At a broader level, institutions set the context to which all individuals are confined. Specifically, the cost nature of transactions is the basic unit of analysis, with the economisation of ‘transaction costs’ through the assignment of transactions to governance structures in a discriminatory way (Williamson, 1985). Institutions of a country determine the viability of engaging in certain forms of economic activity, such as foreign direct investment, by influencing the costs of transactions and production (Coase, 1998). ‘Effective’ institutional regimes provide the sole method of transaction cost reduction through removing the need for ex-ante expenses (required in light of low ‘transactional trust’). As such, high transaction costs have an overall negative

impact on economic productivity, and thereby have an overall negative impact on economic growth (North, 1990). Thus, transaction cost analysis advances that it is these institutions that have the prime role and purpose of economising on transaction costs. Differently, transaction costs provide a natural analytical point for understanding how institutions affect the actions and agency of economic agents, where transaction costs are the “cost of running the economic system” (Williamson, 1985), hereby taking a liberal ‘best way’ stance (Rodrik, 2008).

2.4.2 New Organisational Institutionalism

Firmly rooted in sociology and organisational theory, ‘organisational institutionalism’ sees institutions as intra-organisational forms, practices and activities that are enforced through coercive, mimetic and normative mechanisms (DiMaggio & Powell, 1983; Scott, 1995). Focusing on organisational practices and forms, organisational institutionalism lends itself to a more nuanced organisation-level approach beyond the national level led perspective of new institutional economics. Its traditional conceptualization of institutions as organisational structures has introduced more ‘relevance’ to analysing the disseminations of organisational patterns and explaining various similarities and differences in organisational practices. This has led to the birth of literature based upon internal and external legitimises of firms (i.e. Kostova & Zaheer, 1999; Kostova, 1999; Kostova & Roth, 2002), igniting a fruitful strand of organisational institutionalism based application. Whilst less pronounced, organisational institutionalism can be best understood when comparing ‘old’ organisational institutionalism to the differences of the emergent ‘new’ organisational institutionalism (Lowndes & Roberts, 2013).

A group of old organisational institutionalists, most notably Selznick (1949; 1996) and Clark (1960; 1972) are largely considered to be the founding fathers of ‘organisational institutionalism’, for what is now, in contrast, the ‘new’ organisational institutionalism approaches led by DiMaggio & Powell (1991) and Scott (1987). For Selznick (2011) and Clark (1960, 1972), organisations develop distinct patterns of characteristics in the forms of both practices and competencies. Practices are ‘institutionalised’ given the interplay between the internal and external environment thereby leading the distinct and varied ‘character’ of individual organisations (Hotho & Pedersen, 2012). Distinct organisational forms become deeply ‘stable’ creations given the nature of path dependent institutionalisation and therefore are isolated against external pressures of conformity (Selznick, 2011). As such, old organisational institutionalism views the process of institutionalisation as an adaptive mechanism of organisations (Selznick, 1996), and it is by creating orderly and socially integrated patterns that ensure both internal legitimacy and stability.

This point of institutionalisation provides the primary point of contrast between the old and new organisational institutionalism perspectives. That is whether institutionalisation occurs within a particular field or within specific and individual organisations. For old organisational scholars, institutions are viewed as intra-organisational patterns that promote a specific activity format and thus the organisation becomes the primary analytical foci (Ranson et al, 1980). For new organisational institutionalists, institutionalised forms of the organisation are part of a wider set of shared belief systems (Scott, 1987). As a result, new organisational institutionalism uses its perspective to explain the homogeneity of forms and practices found within organisations. This is in direct contrast to ‘older’ forms of institutionalism which seeks to highlight differences between organisations through the lens of institutionalisation.

From the perspective of explaining organisational homogeneity, new organisational institutionalism sees institutions as “taken for granted ways of acting, which derive from shared regulative, cognitive and normative frames” (Morgan & Kristensen, 2006, p. 1470). Both rules and norms form a set of shared belief systems which are common across all organisations, with the institutionalisation of forms and conventions being led by the organisational ‘field’ rather than by individual organisation (Powell & DiMaggio, 1991). As held by Meyer and Rowan (1977), given organisational conformity leads to ‘reward’ by the increase in organisational legitimacy, organisations will strive towards institutionalised convergence in search of a pecuniary reward. Organisational conformity, through the channel of internal legitimacy, allows organisations access to resources which ultimately leads to organisational survival (Kostova & Roth, 2002; Meyer & Rowan, 1977). These pressures are often referred to ‘institutional isomorphism’; the explanation of *convergence* in organisational structures and forms. Where new institutional economics suggests that economic actions are restricted through formal based institutions, new organisational institutionalist scholars further argue that social behaviour is further guided by both normative and cultural ‘scripts’ (Scott, 1995; 2008). This naturally provides a contrast in institutional focus and institutional application contingent on the discipline at hand.

Given these isomorphic pressures lead to a specific character of organisational forms, which are shaped by the nature of their institutional environment, like institutional economics, has led to a birth of criticism in relation to their determinist perspectives (Tolbert & Zucker, 1999). In the search for a more dynamic organisation institutionalism perspective, Holm (1995) and Seo & Creed (2002) forward the counter-intuitive perspective of how actors influence and change their environment in which they are deeply embedded. They argue that contradictory institutional logics provide actors with choice, which leads to pressures towards reversing the processes of institutionalisation

(Friedland & Alford, 1991; Oliver, 1992). Instead of conforming to the institutional environment, the determinist view, actors may instead seek to ‘manipulate’ or ‘defy’ them (Dacin et al, 2010). Therefore, where the institutional environment creates unstable institutional logics, actors may act as ‘institutional entrepreneurs’ in the attempt to influence the legitimacy of organisational forms and practices (Garud et al, 2007; DiMaggio, 1988).

At a more applied level, new organisational institutionalism has been predominately developed by the work of Zaheer, Roth and Kostova (1997, 1999; Kostova and Zaheer, 1999). This work suggests that the widening institutional ‘duality’ between varied institutional environments increases organisational pressure to maintain both internal and external legitimacy, therefore diminishing the effectiveness of organisations operating in numerous country contexts. Here, new organisational institutionalism suggests the growing variance between home and host institutional environments places pressures on organisations to maintain organisational legitimacy (Kostova & Zaheer, 1999). The larger the institutional ‘duality’ experienced by local subsidiaries leads to greater complexity faced by organisations, diminishing the effective transfer of organisational practices to foreign affiliates (Kostova & Roth, 2002) and lack of effective cognitive, normative and regulative frames. The pressures to maintain internal and external legitimacy have provided an explanation of entry mode decisions (Vora & Kostova, 2007; Davis et al, 2000; Meyer, 2001) and location strategies of multinational enterprises (Xu & Shenkar, 2002; Meyer et al, 2009). This institutional approach has also been used to explain the international variation of organisation practices such as corporate social responsibility (CSR) measures and human resource (HR) procedures (Gaur et al, 2007).

2.4.3 Comparative Political Economy & Comparative Institutionalism

“Research linking institutional differences to specific economic outcomes has remained surprisingly underdeveloped”

(Witt & Jackson, 2016, p. 780)

Unlike other strands of institutional theory, the main concept behind the comparative institutionalism perspectives is that different socioeconomic models are neither near-identical versions of the same ‘market capitalist economy’ nor the random assembly of economic institutions. This perspective disputes the notion that there is one ‘right’ growth model for maximising economic performance (as present Governments are trying to achieve) and rejects the assertion that structural reform should be driven by the goal of homogenised liberalisation and deregulation. Capitalism is seen as institutionally varied production regimes, taking diverse institutional configurations and forms. Therefore, the formation of identical institutional areas (namely institutional sub-spheres or domains), in varied political economies would not lead to identical growth trajectories, namely in light of path dependencies and institutional complementarities (Amable, et al, 2011). A key theoretical tenant of comparative institutionalism is that societal institutions affect the organisation of economic activities and, thereby, a range of organisational and country-level outcomes (Jackson & Deeg, 2008; Hall & Soskice, 2001; Hotho, 2014). Here, institutions are identified by their ‘*divergence*’, unlike the ‘*convergence*’ perspective of both new institutional economics and new organisational institutionalism (Allen & Aldred, 2012).

From this, the comparative institutionalism literature characterises national political economies by the particular ‘logic’ of economic agency developed by the distinct capitalist typologies of institutional configuration. This poses an institutional theory whereby the character and interests of actors are conditioned by a given arrangement, leading to the development of actor’s resources, strategies and capabilities. Put differently, comparative institutionalism suggests that institutions develop the ‘supply-side’ of a given economy, shaping the collectivism of capitalist inputs (land, labour, capital, products) accessible to the actors within it (Baccaro & Pontusson, 2016; Hancke, 2009). Given the foregoing discussions have demonstrated that the entrepreneur remains at the fulcrum of capitalist societies, (re-)combining from given labour, capital, land, goods and services product markets, the nature of a given institutional configuration holds a considerable agenda to the behaviour of this market agent.

Comparative institutionalism approach to institutional theory develops four key theoretical tenets. Firstly, unlike other institutional approaches, comparative institutionalism emphasises that institutional sub-spheres are complementary and fundamentally interdependent. A complementarity exists when the presence and efficiency of one institution increases the returns from another institutional domain (Aoki, 1994; Amable, 2016), tending to underpin the OECD emphasis of the liberal market/coordinated market economy (LME/CME) dichotomy (Hall & Soskice, 2001; Hall & Gingerich, 2009). Given that complementarities generate mutual returns, economies with a given degree of institutional coordination in one sub-spheres, cultivate an interdependent institutional practice in neighbouring sub-spheres. Thus capitalist variety can be observed as a path-dependent phenomenon. Such core of the literature distinguishes both from idiosyncratic studies of institutional singularity (like new institutional economics), and parallel streams of comparative economic analysis. This is because the ‘building

blocks' of capitalism are functionally inter-reliant on one another, founded on the basis of mutual reinforcement of an interacting and dynamic process.

Secondly, given the nature of institutional complementarities and interdependence, whereby functional interrelations between institutional domains gives rise to further 'non-random' configurations of capitalism (Jackson & Deeg, 2008). Thus, institutional change remains incremental and path-dependent (Amable & Palombarini, 2009). Despite the present arguments of institutional convergence under globalisation, the comparative institutionalism perspective suggests that competitive external pressures are absorbed through both the view of 'institutional combination' and the interdependent nature of such combination. As such, institutional change remains more difficult, costly and timely given the leading shock effect to other institutional sub-spheres (Williamson, 2000). Therefore, institutional change will develop with a gradual 'national flavour' of path dependency, underpinning the potential redundancy of the 'convergence argument' (i.e. liberal convergence, Europeanisation). This supports the idea of '*equifinality*', that there is no one perfect and optimal model of capitalism, underpinning the hypothesis of institutional coherence. From this, the sociologically based arguments of 'institutional isomorphism' remain largely unfounded and unjustified.

Thirdly, the comparative institutionalism literature naturally evolves the argument of institutional diversity, for which highlights distinct advantages or disadvantages for various sorts of economic activity. The integrated nature of institutional sub-spheres with studies of political and institutional proxies emphasises a variety of distinct possible economic outcomes and behaviours, suggesting that potential capitalist divergence supports a given 'comparative (institutional) advantage'. Diverging societal institutions offer countries comparative advantages in some but not all activities, and that those institutions encourage divergent patterns of economic activities and entrepreneurial

specialisations (Hotho, 2014). While this proposition is intuitively appealing, empirical studies of the links between economic outcomes and institutions are often inconclusive (Kenworthy, 2006; Hotho, 2014). Connecting streams of literature have yet to fully utilise such feature of the comparative institutionalism literature, namely for analysis of institutional advantages and entrepreneurship. Whilst under-emphasized, several studies have attempted to survey the overall macroeconomic performance of varied capitalist types, taking account of growth, employment (Hall & Gingerich, 2009), fiscal stance (Amable & Azizi, 2011) and instability (Hall, 2014). However, little consensus remains. Hall and Gingerich (2009) support the claims of Hall & Soskice (2001) in that the level of institutional coherence, the degree to which economies exhibit LME or CME traits, is positively correlated with economic performance. With similar logic, Kenworthy (2006) finds no significant relationship between internal institutional consistency and macroeconomic performance, indicating that both the validity and literature consensus on the effect of institutional diversity remains limited, and clearly an area for further research.

Lastly, given its eclectic background of inter-disciplinary analysis, the comparative institutionalism literature takes forward the view of Weber (1978) and Granovetter (1985), in that economic activity remains embedded in a deep social context for which requires governance, coordination and legitimate authority through an array of institutional sub-spheres. Given that an institutional setting is required in the arena of socio-economic context, the 'new institutional economics' literature of 'markets and hierarchies' (Riordan & Williamson, 1985) existing as the prime governance mechanism remains truly displaced. Comparative capitalism takes a broader agenda in the light of economic sociology, in which there remains a co-existence of informal institutions of social networks and societal cohesion, analogous to that of the pure economic analysis of idiosyncratic formal institutions and state intervention. As such, comparative

capitalism allows the analysis of the socio-politico-economic phenomenon, vis-à-vis that of the prevailing economic focus of ‘new institutional economics’. The crucial themes of these institutional approaches are captured within Table 2.1.

Table 2.1 Diversity of Institutional Approaches

Institutional Approach	Analytical Focus	Analytical Tier	Core Measures	Institutions as...	Key Literature
New Institutional Economics (NIE)	Formal & Informal institutions that mitigate the cost of transacting in a market setting	National 'rules of the game' and 'transactions	Institutional effectiveness and Efficiency in Reducing Transaction Costs	' <i>Converging</i> ' through seeking 'effectiveness'. Narrow Structures	North (1987; 1991; 1994), Williamson (1975; 1981; 2000), Coase (1937; 1998; 1960)
New Organizational Institutionalism	Analysing the dissemination of organisational patterns and explaining various similarities and differences in organisational practices	Organisation Level	Organisational Pillars: Regulative, Normative & Cognitive	' <i>Converging</i> ' via 'Institutional morphism' and seeking 'effectiveness'. Narrow Structures	DiMaggio & Powell (1983), Scott (1987; 2005), Meyer & Rowan (1977)
Comparative Institutionalism	Comparison of institutional configurations & complementarity patterns that underlines the topography of capitalist diversity - these shape the supply of inputs within an economy	National Socioeconomic differences and complementarity configurations	Institutional Coordination, Coherence & Ownership Structures	' <i>Diverging</i> '. Broad structures	Hall & Soskice (2001); Whitley (1999); Amable (2003)

2.5 Comparative Institutionalism: *Intra-Diversity of Approaches*

Despite the commonalities within the comparative institutionalism literature, a vast field of variety still remains within it, characterising the distinct way of methodological use, domains of analysis, and the geographic dispersion of capitalist arrangements. The diversity of literature is representative of the lack of agreements in the distinct types of capitalism, or indeed the approach to analytical strategies of comparative study (Jessop, 2014). This is inherent of the diverse array of institutional sub-spheres utilised to illustrate capitalism frameworks, methodological ordering principles, or indeed the nature of ‘crucial dimensions’. Whilst these remain explicit features, and one that is emphasised by the varied comparative discourses, implicit features yet remain. Multiplicity lies again with the ‘softer’ conception of the nature of institutions and the way in which they ‘enable’ and ‘constrain’. Surprisingly, there remains little definition of ‘capitalism’ itself. So while common principles rest, they fail to remain analytically equal, contributing to the divergent topography of the comparative institutionalism literature. This is useful to discuss as it unearths the potential for institutional theory to support novel analysis of institutional impact.

Combined together, the varied plurality of literature approaches blends a potential for comparative analysis itself, suggesting varied expectations of economic action and thus distinct routes of economic dynamism through the various views of institutional configuration and the nature of institutional change (Chang, 2007; Streeck and Thelen, 2005; Hall and Thelen, 2009). The varied comparative institutionalism strands are defined by common elements that distinguish the ‘uniqueness’ of each approach – namely (i) the comparison of institutional configurations which derive from varied conceptions

of institutional sub-spheres, (ii) theory of comparative institutional advantages for different types of economic activity, (iii) dominant dimensions of diversity and (iv) the ‘stickiness’ of institutions which give birth to multiple institutional equilibria. There are three synthetic frameworks within the comparative institutionalism literature, namely the ‘varieties of capitalism’ approach, ‘national business systems’ approach and ‘governance-led’ approaches. These form the discussion below and are conceptualised within Table 2.2.

Table 2.2 Diversity of Comparative Institutionalism Literature: *Capitalism as Varied Institutional Regimes*

Comparative Institutionalism Approach	In-Analytical Perspective	Equilibria Points of Capitalism	Dominant Dimensions of Analysis/Diversity	Institutional Points of Contrast (Institutional Spheres/Domains)	Key Literature
<i>Varities of Capitalism (VoC)</i>	Institutional explanation for cross-country differences in firm behaviour as developed by the varied equilibria points of capitalism	Liberal Economies (LMEs) vs Coordinated Market Economies (CMEs). Intermediate types developed: MME	Coordination (Degree of Strategic Coordination) & Coherence	Industrial Relations, Financial & Corporate Governance system, Inter-company system, Education & Training system	Hall & Soskice (2001); Hall & Gingerich (2004); Schneider & Paunescu (2012); Kenworthy (2006); Witt & Jackson (2016); Allen (2004); Amable & Auzi (2011)
<i>National Business Systems (NBS)</i>	Institutions shape & establish the type of firms that exist, their conduct & interconnections which reinforce the nature of routine, capabilities and strategies of each firm/agent	Fragmented, Coordinated Industrial Districts, Compartmentalised, State-Organised, Collaborative and Highly Coordinated Business systems	Type of non-ownership coordination, type of employment relations and the dominant type of ownership coordination	Role of the state, the format of financial systems, the skill-development system and the norms and values within work relations	Whitley (1999; 2000; 2007; 2010); Witt & Redding (2013); Morgan et al (2005); Hotho (2014)
<i>Governance Based Approach</i>	Mapping the diversity of coordination mechanism used in the governance of economic activity. Historically analysing long-term evolution of the capitalist system in terms of 'accumulation regimes'	Market-based, social-democratic, Continental European; Mediterranean and Asian model of capitalism	Coordination and Coherence of Institutional Complementarities	Product markets, Wage-Setting system/labour market, Finance system, Welfare system, Education system	Amable (2003; 2009; 2016; 2000; 2011); Boyer (1986; 1990; 1997; 1998; 2004); Crouch & Streeck (1997); Guttman (2015)

2.5.1 Varieties of Capitalism (VoC)

Given the dissimilarity of intellectual and scholarly activity with respect to explaining institutional diversity, has led to the birth of three parallel approaches to querying the nature of capitalist variety. Firstly, aligned closely between the intersects of neoclassical economics and political science, rests the "Varieties of Capitalism" (VoC) approach centring on the work of Hall & Soskice (2001), yet drawing much attention from Albert (1993). The 'dualistic' approach of VoC has become the dominant and somewhat emblematic citation of comparative capitalism, with neighbouring approaches often described as the 'alternatives' (Bruff et al 2015; Crouch, 2005a). Hall & Soskice (2001) categorises the firm as a relational point within the network of an institutionally embedded environment. Whilst there remains a populated topography of relevant actors within a capitalist arena, such as the state, individuals, pressure groups, or indeed, the entrepreneur, the VoC approach largely takes forward the firm as the central economic actor. Given the institutionally embedded nature of the firm, operating with a matrix of incentives and sanctions, the relational nature of the analytical foci presents the response of predictive economic behaviour. This directly evolves from the varieties of capitalism perspective that firm's agency is a product of their institutional environment. Such approach conveys well the nature of comparative institutional advantage, which has lent itself to more policy active literature (e.g. Schneider, 2010; Johnston et al, 2014; Hall, 2014). VoC has successfully revived the interest towards institutionalist view of comparative political economy. However, it has done so by providing an opaque and superficial view of how comparative institutionalism can provide deeper and theoretical insight into a broader agenda of capitalist development, dynamics, and institutionalisation (Clift, 2014).

With a focus on micro-agents, VoC starts with the firm at the centre of analysis seeking to understand how they organise activities in varied production regimes. The firm operates in a ‘relational’ network and is therefore institutionally embedded within a matrix of varied institutional sub-spheres. It is the configuration of institutional sub-spheres that in turn develop the institutional framework and production regime to which political science scholars refer to as ‘capitalism(s)’. Variance within these frameworks is mutually attuned in systemic ways, leading to unique sets of institutional complementarities which produce specific patterns of competitive advantage. This approach, axiomatically, offers an institutional explanation for cross-country differences in micro-behaviour as developed by the varied equilibria points of capitalism (Jackson & Deeg, 2008). At the centre of the varieties of capitalism approach is its articulation of diverse forms of institutional frameworks. What emerged from the Hall & Soskice (2001) assessment, in polar ideal types, were two specific forms of institutional equilibria – liberal market economies (LMEs) and coordinated market economies (CMEs). The former is coordinated by market activities such as contractual relations and the latter relies on strategic forms of coordination (Hall & Soskice, 2001).

Starting with the ‘resource based’ perspectives of the firm (Barney, 1991) in that firms seek to develop core competencies and dynamic capabilities, the varieties of capitalism approach explores capitalism from its central actor – firms. From this point, VoC provides a micro-analytical view on the underlying ‘coordination’ problems that firms face in transacting within non-market forms. According to Hall & Soskice (2001), extending from new institutional economics, economic exchange is plagued by informational asymmetries, principal-agent issues, opportunist behaviours and therefore transaction costs. Smoothing coordination problems deriving from transaction costs, VoC argues that mitigation occurs by the historically given institutional framework. Formally, varieties of capitalism emphasise the presence of institutions providing

capabilities for increasing the exchange of information, the monitoring of behaviour and sanctioning of opportunist behaviour. These coordination issues are resolved by the institutions of the political economy which given the multiplicity of institutional sub-spheres, take specific forms, specifically liberal and coordinated market typologies (Hall & Soskice, 2001). In the VoC example, firms find themselves permanently exposed to markets. Labour markets where workers and management interact, capital markets which provide capital to firms and product markets which structure relations between customers and firms – these sub-spheres take very different and divergent shapes in different capitalist political economies. According to the qualitative assessment of Hall & Soskice (2001), labour markets in North-Western European economies are idealised as having corporatist provisions, with strong unionisation and collective bargaining arrangements. Labour markets in the Anglo-Saxon sphere, however, are characterised by flexible labour relations and decentralised wage bargaining systems. Financial markets in these countries offer market led short-term capital and dispersed shareholder systems, representative of the financialization trend in core advanced economies. These markets interact in non-coincidental and complementary ways which offer unique and distinct economic outcomes. As such, firms do not operate in homogeneous institutional frameworks and thus diverge in their forms of micro-behaviour.

The varieties of capitalism approach links this insight into perhaps its core and fundamental insight – the presence of several ‘tightly calibrated’ institutional sub-spheres determines the overall efficacy of the institutional framework/capitalist model. The formal concept, “institutional complementarities” (Hall & Soskice, 2001; Aoki, 1994) infers that for the overall efficacy of institutional logics to have positive trends in comparative advantage, institutional sub-systems must reinforce each other. The varieties of capitalism literature highlight four institutional sub-systems which provide their natural point of cross-national diversity namely – the ‘industrial relations system’,

‘education & training system’, ‘inter-company system’ and the ‘financial & corporate governance system’. The nature of the links between these institutional sub-spheres defines the culture of institutional complementarity, and thus the degree to which it converges to one of the two positions of institutional equilibria. For Hall & Soskice (2001), these institutional equilibria are representative of whether the political economy is either a coordinated market economy (CME) or liberal market economy (LME). Coordinated market economies, as portrayed within the political economies of Germany and Sweden, are characterised by the dominant form of non-market relations, harmony, collaboration and commitment between firms. Firms here depend heavily on non-market relationships, ‘collaborative over competition’ with equilibria established not through market forces but strategic interactions between firms and other actors. In contrast to this, liberal market economies such as those Anglo-Saxon countries are defined by their arms-length, competitive relations and supply-and-demand price signalling (Hall & Soskice, 2001). Contingent on market principles, price signals adjust the willingness of economic agents through the standard neoclassical economics theory of marginal calculation. Thus in LMEs, market institutions provide a highly effective form of coordinating actors and reducing transaction costs.

It is the very nature of these institutional complementarities and institutional equilibria that lead to different yet specific forms of firm behaviour, innovation patterns and economic outcomes. In liberal market economies, flexible labour markets complement the short-termism nature of the financial systems allows more dynamism in meeting new demands, encouraging more ‘radical innovation’ in sectors of high value added activity. In CMEs, long-term capital provision combined with protected labour markets and high education skill specificity underpin a more ‘incremental innovation’ trend in sectors dominated by capital goods (Hall & Soskice, 2001; Hall & Gingerich, 2009; Schneider et al, 2010). The liberal market configuration reinforces the investment

in fluid switchable assets, namely weak asset specificity. Contrary, the CME logic underpins a more rigid investment focus on specific assets whose value depends on the active operation of others (Hall & Soskice, 2001).

The persistence of the varied institutional equilibria is further reinforced by the varied incentives created by each ‘variety of capitalism’. It is the different incentives created by the institutional framework that generates a specific and supporting ‘politics of economic adjustment’ (Molina & Rhodes, 2007), causing both a course of economic reform and isolation from globalisation convergence pressures. As VoC argues, those with fluid and non-specific assets, in the face of shocks undermining the profits on current activities, will be tempted to stop current activities to seek higher returns in ‘new’ profitable areas. It is the nature of the political economy of institutions that allows such transferable activities in LMEs and therefore acts as a catalyst to structural reform. Similarly, those with specific assets will exercise a voice in defence of existing activities (Hall & Gingerich, 2009). As such, coordinated market economies will often oppose greater market pressures in the attempt to maintain the returns on their assets. Meanwhile, liberal market economies will seek to reverse the trends in regulation to further provide marketization and flexibility. For the VoC approach, equilibria will become stable through the mechanism of adjustment incentives as created by the varied institutional logics of political economies. In contrast to the *convergence* arguments of NIE, the process of globalisation provides the vehicle for which reinforces the logic of divergent adjustment rather than undermining it (Hall & Soskice, 2001). Further, because capital flows towards the institutional framework which provides complementary assets, both liberalisation and globalisation will often fetch specific comparative institutional advantages. As such, the varieties of capitalism approach claims that each political economy will be identified at a specific level of the value chain. Given deep set flexibilities, LMEs will tend to encourage production based on

low skill price orientated activities. Coordinated market economies meanwhile provide the core activities of high value added, skill dependent and high productive formats of production. This, however, has been contended by the recent works of Taylor (2004) & Akkermans et al (2009) and indirectly by Hancke & Herrmann (2007).

From the work of Hall and Gingerich (2009, p. 27), rates of economic growth should be higher in nations where levels of institutional coherence are high but lower in nations where institutional coherence is low. Simply, converging on the liberal model, as neoclassical economics would suggest, is not the ‘best way’ to order a countries production regime. Political economies, in search for institutional efficiencies, should either diverge on the liberal or coordinated market trajectory (Hall & Gingerich, 2009). There is not one best model of capitalism, but two equally efficient growth regimes.

2.5.2 National Business System (NBS)

The growing scholarly activity with regards to understanding the topography of political economies has, as this section argues, led to different yet parallel approaches. Whilst the ‘varieties of capitalism’ approach is often regarded as the intellectual heir of the comparative institutionalism literature (Crouch, 2009), neighbouring approaches offer a broader and complementary perspective to understanding cross-national institutional diversity. Where the Hall & Soskice (2001) approach closely links political science with both neoclassical and heterodox economics, ‘other’ approaches have intellectual roots in alternative social sciences, emphasising the role of broader institutional structures, path-dependant legacies and importantly, alternative perspectives on the topography of capitalist diversity. Whilst all comparative institutionalism approaches are primarily concerned with empirically proving the nature of cross-national differences

within institutional frameworks, and that ultimately institutions are ‘sticky’, yet they fundamentally differ in respect to their channels of characterising key institutional sub-spheres. They measure capitalist political economies in different ways and consider their methodological approaches to be superior to the varieties of capitalism approach. Applications of comparative institutionalism literature can, therefore, be numerous, holding varied analytical perspectives and domains of analysis (Hancke, 2009; Crouch, 2009).

Amongst the “post-VoC” movement (Ebenau et al, 2015, p. 34), rests the systematic approach of Whitley’s (1999; 2007; 2010) ‘National Business Systems’ (NBS) capitalist perspective. The core point of the national business systems approach is that business systems, defined as the ‘dominant patterns of economic organisation and control’ (Whitley, 1999), can be compared analytically along three key dimensions: the type of non-ownership coordination, the type of employment relations and the dominant type of ownership coordination. Organising capitalist diversity along these spectrums would then reflect, at an aggregate level, the dominance of certain types of firms that have particular strategies and relations with other economic actors (Whitley, 1999; 2000). Consequently, Whitley (1999) identifies six types of business systems, broadly ranging from the standard dichotomy of market-orientated to state organised spectrum of political economies.

A central tenant of the national business systems approach is their view on the internal consistencies of the dominant modes of economic organisation. Like Hall & Soskice (2001), Whitley’s (1999) approach recognises the nature of complementarity and interdependence between the institutional sub-spheres. Business systems dominated by market led ownership relations are more inclined to support short-term capital and risk-sharing between employers and employees, contrasting economies characterised

by high levels market protection. Those with high market control and ownership are defined by their way of limiting cooperation between firms. Like the core assumptions of VoC, the viable number of functional combinations of institutional sub-spheres would suggest that there is a unique set of equitable business systems (Whitley, 1999). These established patterns of economic control and coordination are deeply coherent, and therefore are likely to persist as equilibria points over time.

Another key notion of the national business system perspective is that the distinct and dominant ways in which economic activities are coordinated and controlled are contingent on the nature and format of societal institutions. Given economic coordination problems similar to those identified by Hall & Soskice (2001), institutions generate and produce established resource allocation patterns which deter against coordination asymmetries. In this regard, institutions are important because they encourage particular types of ownership coordination, how actors interact and as a consequence, what they produce. The key institutional sub-spheres underpinning how business systems coordinate and control are: the role of the state, the format of the financial system, the skill-development system and the norms & values within work relations (Whitley, 1999).

As argued, it is not just the individuality of these institutions that matters, but rather their form of interdependence and complementarity. Symbiotic relations between institutions creates the very stable patterns of economic configuration to which condition the actions of individuals and firms in theorised predictable ways. Relying on a wide variety of different configurations of institutional sub-systems, Whitley (1999) proposes a conceptual typology of six types of business systems. These are born from unique and diverse institutional “constellations” (Hancke, 2009, p. 12) and particular types of dominant firms. First, a fragmented business system, characterised by small firms that

cooperate little with other firms, whilst failing to develop long-term links with customers nor employees. Symbolised by high direct control and low alliance coordination, these business systems are often located in countries where trust is weak and financial capital is limited. Markets, therefore, tend to be highly competitive, and the small firms tend to be adaptive in seeking market opportunities (Whitley, 1999). Second, coordinated industrial district business systems, similarly consisting of small firms, yet with greater alliance coordination. Both labour and capital inputs are coordinated with firms more readily adapt to meeting consumer demand. The state undertakes a more active role, protecting market structures alongside the provision of high asset-specific training.

Compartmentalised business systems are the third type identified by Whitley (1999). These are characterised by high ownership coordination and low non-ownership coordination which are led by large firms often with the autarchic provision of capital and labour. Strong formal institutions enable extensive market-based transaction to take place, which encourages competition amongst firms. While large firms play a similar role within the fourth type, state-organised business systems, they are jointly led by the state. The state actively provides firms with abundant and cheap capital, undertaking a 'dirigiste' led role in organising economic development (Kim & Kim, 1997). This encourages direct ownership with tight relationships amongst business and political elites. Fifth, collaborative business systems display strong interconnections and risk-sharing amongst economic actors. This allows scope for collective organisation and cooperation at the industry level, combining with a labour market governed through dense training systems and centralised wage bargaining systems. In contrast, highly coordinated business systems extend its collaboration across all industries which often takes the 'Japanese' form (Gerlach, 1992) of 'alliance' based business networks. The state takes a more active guiding role than within collaborative business systems, yet

often delegating considerable social and economic decision autonomy to intermediary associations.

The typology based perspectives of the national business systems approach offer considerable benefits as a conceptual framework when seeking to understand spatial discrepancies in economic development. The formulation of typologies provides insight into the specific logics of distinct patterns of economic action, control and coordination whilst providing analysis into the general relations between institutions and economic activities (Hotho, 2014). As such, Whitley's (1999) institutionalist approach has forwarded the scope of comparative institutionalist literature to provide scholars with empirically grounded classification tools. Alongside the varieties of capitalism approach, the national business system work as reduced the complexity of political economies to clear forms exhibiting coherent patterns of economic action, offering an analytical dimension to which individual capitalist institutional models can be studied and compared.

Despite this collective function, national business systems perspective contrasts VoC by taking a more empirically driven approach, largely based on facts that claim to capture the architecture of economic relations within a given 'capitalism'. The national business system approach uses similar categories of institutional sub-systems to that of Hall & Soskice (2001), with some arguing that Whitley's (1999) typologies are subsets of the binary LME/CME dichotomy (Hancke, 2009). The basis of typology variety is also part of the analytical difference between the two approaches. Varieties of capitalism gain traction from its simplistic elegance and has often been the base of further comparative institutionalist literature (Hall & Gingerich, 2009; Schneider & Paunescu, 2010; Amable & Azizi, 2014).

2.5.3 Governance Approaches

Thirdly, aligned closely with the empirical basis of NBS, yet with a growing foundation of statistical induction, lies the ‘governance approach’ associated with the combined work of Hollingsworth & Boyer (1997) and Crouch & Streeck (1997). Beyond the traditional distinction between hierarchies and markets, this approach addresses a more holistic view of ‘governance’ mechanisms ignored largely by institutional economics, stressing the domains of the state, networks, and communitarian norms. Different from the ‘varieties of capitalism’ approach, regulation theory focuses on the temporal dimension of the institutional organization of production regimes and the periodic shifts in this organization (Hopner, 2005a). Authors of this approach map the diversity of coordination mechanisms used in the governance of economic activity. Beyond the traditional distinction between markets and hierarchies, the framework includes communities, the state, networks, and associations. These six basic governance mechanisms differ along two underlying dimensions: the degree of self-interest or obligations for actors, and the degree to which power is distributed horizontally or exercised vertically. Each governance mechanism has its own organizational structure, rules of exchange and enforcement, and typical strengths or failures (Hollingsworth & Boyer, 1997). Where Hall & Soskice (2001) emphasise rational strategic behaviour within a set of fixed institutions, the governance ‘framework’ lends more attention to logics of appropriateness in shaping economic agency and choices.

Authors Hollingsworth & Boyer (1997) use industrial sectors as their unit of comparative analysis. In their sample of eight countries, the authors find substantial and significant differences in governance mechanisms across sectors within individual economies. Differences in governance within sectors are often recognisable as national differences in that they follow a similar logic across subsequent sectors (Hollingsworth &

Boyer, 1997). They explain this by arguing that social institutions supporting different mechanisms of economic governance are, for the most part, nationally distinct in the use of relational trading in networks, willingness to form associations and the degree of state intervention. Different sets of institutions are either more or less supportive of particular modes of governance and thus either enable or constrain different sorts of company strategies.

However, vast innovations and expansions of such ‘governance’ discourse have developed the ‘social systems of innovation and production’ (SSIP) approach furthered by Amable (2003). Instead of the dualistic analytical distinction of the VoC literature, or on the stylised fashion of NBS representations, the post-dualistic prose of SSIP are built on statistical inductive measures of increasing institutional (relevant) domains, with quantitative data more systematically gathered vis-à-vis the NBS methodologies. Amable’s (2003) analysis centres around five institutional sub-spheres, to which establishing close links between correlation analysis and principal-agent analysis, evolves an underlying institutional unity for which characterises varied institutional mixes into five distinct models of capitalism. Grouping capitalist economies based on their similarities (using cluster analysis) in these institutional sub-spheres generates models of capitalism: a market-based model, a social-democratic model, a continental European model, a Mediterranean model, and an Asian model. One of the key additions Amable makes to the SSIP and VoC approaches is the further development of the political dimension to models of capitalism. This turns out to be very important toward understanding change and the evolution of a capitalist system. In particular, Amable argues that institutional configurations reflect the preferences of the dominant social bloc. Institutional change and adaptation are a reflection of political coalitions that emerge and provide a critical mass of actioned change.

Table 2.3 Institutional Dimensions of Leading Models of Comparative Institutional Analysis

Dimension/Sub-sphere	Whitley (1999)	Hall & Soskice (2001)	Amable (2003)	Witt & Redding (2013)
Education & Skill Formation	Yes	Yes	Yes	Yes
Employment Relations/Labour Markets	Yes	Yes	Yes	Yes
Financial System	Yes	Yes	Yes	Yes
Product Markets			Yes	
Interfirm Networks	Yes	Yes		Yes
Internal Dynamics of the Firm	Yes	Yes		Yes
Ownership & Corporate Governance	Yes	Yes		Yes
Social Capital	Yes			Yes
Social Protection			Yes	
State Role	Yes			Yes

Table 2.3 illustrates the institutional dimensions applied by the leading models of comparative institutional analysis. As it can be seen, the field of comparative institutionalism analysis is defined by the width of institutional approaches, and therefore the definition of the institutional environment. However it can be seen that there is a general consensus that the education system, labour market and financial system define well the architecture of the institutional environment.

2.6 Chapter Summary

This chapter reviewed key approaches to institutional theory. It began by defining and outlining the ontology of the term ‘institutions’, in a bid to then understand the role of

institutions on the economic development process. From this perspective, the section has defined and illustrated why ‘understanding institutions’ is imperative. From here, the chapter then provided an overview of the topography of institutional approaches, for what defines a ‘menu’ of institutional theory. The chapter then concluded by narrowing its focus towards the intra-plurality of ‘comparative institutionalism’, illustrating the varieties of capitalism, national business system and governance approaches. Combined together, the varied plurality of literature approaches unearths potential for comparative analysis itself, suggesting varied expectations of economic action through the various views of institutional configuration. How one approaches institutions defines how ‘institutions matter’. This facilitates a contextual approach to entrepreneurship in that economic action does not happen in isolation but indeed within the institutional setup.

Chapter 3

Review of the Literature (Part 2):

Institutions & Comparative

International Entrepreneurship

3.1 Introduction

This chapter forms the second part of the literature review, which focuses on the institutional theory applications to comparative international entrepreneurship studies. It builds upon the first literature chapter to review how entrepreneurship studies utilise institutional approaches from the foregoing discussion. This chapter has two general themes to it. Firstly, it builds upon prior discussion to theoretically motivate the conceptualisation of entrepreneurship, and to demonstrate how the comparative international entrepreneurship literature has applied and utilised the varied institutional theories. Secondly, in an attempt to conceptualise a framework for this study, the

chapter moves on to discussing gaps and weaknesses in the present application of the comparative international entrepreneurship literature. Building upon this, the latter part of this chapter conceptualises key literature themes to build a theoretical and empirical framework.

3.2 Entrepreneurship & Economic Growth

The traditional theory of long-term economic growth rests on the assumption that physical capital and labour remain the driving factors behind economic development (Solow, 1956; Swan, 1956). The components of investment and efficiency counteract the diminishing point of increasing capital stock, upgrading the steady-state of national income. This had been the underlining principle of the ‘Solow model’ in the traditional views of growth. However, the evolution of growth theory has emphasised the emergent importance of knowledge, with the prominence of human capital becoming the central component of the growth process (Romer, 1986). The prominence of endogenous factors inherent within economic development, of which some remain social individuals, came to stress the role of institutional environments, for which enable and constrain specific modes of economic activity (Acemoglu et al, 2014; Acemoglu and Robinson 2008; Rodrik 2003; Rodrik et al, 2004).

Drawing on this understanding, the roles of institutions (Chang 2007; Lin 2012; Rodrik 2008) and entrepreneurship (Acs, 2006; Acs et al, 2008; Noseleit 2013; Wong et al, 2005) have become key perspectives in developmental based analysis of growth. Blending both fields of literature develops a more nuanced and holistic approach to the understanding of growth phenomenon, and as such, highlighting the role of

entrepreneurship. As argued by Carlsson et al (2013), an important reason to study entrepreneurship is given its prime role in the process of growth and development. Antecedent factors that promote entrepreneurship are therefore essential for advancing entrepreneurship scholarship.

Scholars such as Minniti and Levesque (2010) and Michelacci (2003) have used the original assumptions of Schumpeter (1934), that is that the entrepreneur remains the key agents within capitalism, to include entrepreneurship in growth models. These authors demonstrate how entrepreneurship leads to long-term equilibrium gains, and therefore extended growth accumulation. Other studies such as Carree et al (2007) input an 'entrepreneur' function within the Solow model to find its (positive) coefficient strength in the growth process. Further studies provide empirical evidence regarding the impact of entrepreneurship on growth (Audretsch & Keilbach, 2005, 2007; Van Stel, 2006; Wennerkers & Thurik, 1999).

However, what remains absent from these studies are the dynamics through which entrepreneurship is supported by institutions; it remains imperative to develop an understanding on the dynamics of entrepreneurship within the growth process. The disparate nature of this literature highlights varied perspectives to a dynamic approach to the 'entrepreneur envy' growth scholars. Authors such as Van Stel & Storey (2004) stress the role of job creation within new venture creations, while others stress the role of new competition in a neo-classical based perspective of industrial economics (Koster et al, 2012; Kritikos 2014). For some, entrepreneurs contribute to growth via the development of product variety to match the emergent interests of the middle-class (Van Stel 2006; Foellmi and Zweimuller 2008), while Hausmann & Rodrik (2003) argue that the provision of non-pecuniary externalities provides fresh information of profitable opportunities, which then leads to new resource mobilisation and the possibility of

complementary product markets (Holcombe, 2003). According to Gries & Naude (2009, 2010), Naude (2008) & Noseleit (2013), entrepreneurial activity promotes a reallocation of resources, and thus acts to promote allocative and productive efficiency, hereby maximising the underlying dynamism of market based economies.

The binding of this literature highlights two prominent channels of entrepreneurial effect. Firstly, is that entrepreneurship allows individuals to escape from both relative poverty and informality by the form of hierarchic formal ordering of agents. Secondly, entrepreneurship leverage growth by promoting structural change, thereby opening up further opportunities for more productive wage employment, labour mobility and specialisation. Whilst the neo-classical view considers sectoral composition as a by-product of growth (Echevarria, 1997), prominent scholars such as Baumol et al (1989) & Kuznets (1971) regard the changing nature of sectoral structures as the underlying dynamic of growth. The central argument of this causal relation relates to the absence of optimal resource distribution due to an insufficient adjustment to changes in the structural nature of the economy. Increased allocative efficiency is closely related to the innovation in products and services innate to sectoral change (Wong et al, 2005; Aparicio et al, 2015). As such, new business formations that fulfil the functions of innovation remain an important component to growth leverage (Neffke et al, 2011, 2014; Wennekers et al. 2005).

3.3 Conceptualising National Level Entrepreneurship

It has made clear the idea that both institutions and entrepreneurship can be explanatory to the empirical variations in both economic growth and development. Indeed, there has been a long standing literature linking entrepreneurship and growth (Acs et al, 2018), and over the past 20 years, a growing body of literature linking institutions and growth. However, there is less emphasis on the links between entrepreneurship and institutions, which leads to a missing link in the wider understanding to cross-country growth differences and to the entrepreneurial ‘ecosystem’ (Stam, 2015, Acs et al, 2014). To formalize these ideas empirically, studies would need to measure entrepreneurship and institutional arrangements independently, as proposed by Acs et al (2018).

The common study of entrepreneurship has often focused with a ‘homo-economicus’ view of the entrepreneur, that is that they remain free from the conditioning of their environments, with continuous research emphasis on entrepreneurial behaviourism, such as the nature of the individual, traits and personality characteristics. As it goes, entrepreneurship is promoted by creative innovators, perceived as an individualistic act driven only by a few individuals (Herrmann, 2010). These views provide little understanding of entrepreneurship at the national level.

As such, to theoretically conceptualise these ideas, one would need to consider what they mean by entrepreneurship at the country national level. To many authors, entrepreneurship encompasses varied action. To some, it is firm-level behaviour (Henrekson & Sanandaji, 2014), to other it is self-employment (Reynolds et al, 2005), and for Shane (2012), it is an individual cognitive behaviour; a process rather than an event

embodiment as a type of person. When considering national level entrepreneurship, Acs et al (2014, pg. 476) believes "the measurement challenge becomes even more complex when discussing entrepreneurship in countries. If we have difficulty defining entrepreneurship as an individual or firm-level phenomenon, what hope do we have of deciding what 'entrepreneurship' means as a county-level phenomenon?"

Studies at the country national level use measures such as self-employment, new firm start-ups and the rate of churn for example. However, this thesis proposes that country-level entrepreneurship should be treated as a systemic output, the same way the literature on National Systems of Innovation (NSI) considers country-level innovation as a by-product of institutions and policies. As such, this thesis conceptualises entrepreneurship at the national level as a measurement of each countries Total Entrepreneurial Activity (TEA), in line with prominent studies such as Carree & Thurik (2003) and Erken et al (2016). In turn, this thesis conceptualises by theoretically motivating Nelson's (1993) idea that aggregate innovation production of nations is determined by country structure rather than individual process. Measurement should attempt to achieve the same, emphasising the product of the entrepreneurship context as suggested by Stam (2015).

In view of the numerous different theoretical approaches to the understanding of entrepreneurship and their related concepts, this thesis considers entrepreneurship to be an aggregate activity of nations, measuring the attempt at a new business or new venture creation, such as self-employment, a new business organisation, or the expansion of an existing business at the national scale of resolution.

3.4 Perspectives in the Role of Institutions on Entrepreneurship

As suggested, entrepreneurial research has often devoted itself to the study of microeconomic explanations of entrepreneurial behaviour with minimal regard for a broader context (Welter, 2011; Lim et al, 2010). Given this, there has been less interest in understanding the macro environmental conditions that provide relative incentive structures and formalized guiding principles of economic activities. Besides, any individual characteristic will cooperate and interact with contextual factors that facilitate or inhibit the activities of entrepreneurs. Hereby institutional analysis contributes with a fresh theoretical lens to the study of entrepreneurship. This requires a cross-disciplinary nexus of entrepreneurship study with the emerging prominence of institutional theory (Terjesen et al, 2013). As put by Turner (1997), “institutional analysis is an important and often neglected way to understand societies and organization”. This remains true within the present neoclassical synthesis of mainstream economics, and echoes calls to bring ‘institutions back in’ to the study of economics (Groenewegen et al, 2010; Lawson, 2006; Rodrik, 2007b).

Institutional analysis necessarily involves the investigation and examination of contextual institutional regimes with emphasis on specific institutional sub-spheres. The institutional environment refers to the provision of the endowment structures of societies as developed from economic, political, legal and social constructs (North 1991; Williamson, 1985). They provide the foundational basis for economic exchange, and blend capitalist markets with a degree of path dependency and interdependency to support the conditioning of embedded agents and economic activities (Whitley, 1999; Yeung, 2002; Aoki, 1994). An institutional economics perspective would further suggest

that institutional constructs would counteract market imperfections & transaction costs (Williamson 2000). With reference to resource dependency theory (Pfeffer & Salancik, 1978) and Barney's (1991) seminal resource based perspective, institutions undertake a pivotal role in the process in which both individuals and organizations must manage dependencies in order to attain critical resources (Hessels & Terjesen, 2010). Therefore for organizations to succeed, they need to build a competitive advantage in line with the competitive advantage of their institutional environment (Herrmann, 2010). This gives birth to a strong national identity of economic output and conditioned modes of national competitiveness.

To understand the embedded nature of the entrepreneur within an institutional context, analysis should be chiefly concerned with how institutions & institutional configurations affect the behaviour of individuals, such as the decisions to induce new venture creations or to provide new and novel resource combinations. This is the principal aim of the entrepreneurial 'eco-systems' (EE) literature. Authors writing in this vein investigate the link between external environments, including institutions, and entrepreneurship. The entrepreneurial ecosystem concept emphasizes that entrepreneurship takes place in a community of interdependent actors of systemic context (Spigel & Harrison, 2018; Delgado et al, 2010). More particularly, the literature on entrepreneurial ecosystems focuses on the role of the (social) context in allowing or restricting entrepreneurship, and in that sense is closely connected to other recent "systems of entrepreneurship" approaches (Spigel, 2017; Sternberg, 2007; Acs et al, 2014; Levie et al, 2014), which aim to bridge the innovation system approach and entrepreneurship studies (Stam, 2015).

Indeed, the studies of Aidis et al (2008) and Bowen & Clercq (2008) argue that national economic and social institutions promote a specific business climate, whilst also

providing the catalytic fuel to the internal dynamic of contemporary capitalism, which is the evolution of the potential for venture creation. Taking a bounded agency perspective, or the “choice-within-constraint” view of individual-institution interactions, Ingram & Clay (2000) and Hodgson (2007) illuminate how institutions provide enforcement mechanisms which bound agents towards specific patterns, attitudes and values. Here, the modern focus of entrepreneurship research with traits and ‘the great man’ analogy (Yeung, 2002) remains rather questionable, suggesting that all citizens are born with the capacity to be entrepreneurial. This is in direct contrast to an institutionalist perspective of entrepreneurship which suggests that entrepreneurship can be a product of ones institutional environment. Furthermore, if we are to speak of the importance of entrepreneurship within growth (Acs, 2006; Wennerkers & Thurik 1999), the absent acknowledgement that ‘institutions matter’ clearly provides a narrow perspective of economic phenomena (Naude, 2010; Chang, 2007).

Taking the institutional perspective, Baumol (1990) is the first suggests that the structure of rewards condition the nature of entrepreneurial activity. The relative ‘payoff’ structure of society can be seen to allocate entrepreneurial activities to either a productive, unproductive or destructive mean, with these different activities having divergent impact upon economic growth. This argument is based upon providing greater allocative efficiency of the factors of production. In a similar vein, Lim et al (2010) find that institutions directly determine entrepreneurial cognitions. Taking the cognition work of Mitchell et al (2000), Lim et al (2010) find that institutional spheres have both an impact on the arrangement and willingness cognitive scripts involved with the venture creation decision, and hereby provide a process orientated approach to entrepreneurship. They argue that institutions promote a specific knowledge structure that people use to make assessments, judgements and decision involving the ‘risk versus opportunity’ of venture creation decisions.

In sum, institutions work by structuring appropriate and devised paths of action through incentives and sanctions. Taking a view of social rationality, economic actors will act within the confines and limits of their institutional environment, and if we are to understand the nature of entrepreneurial activity, institutional based perspectives remain integral. As argued by North (1991), “that institutions affect the performance of economies is hardly controversial”, yet there is a shortage of analytical frameworks that appreciate how the broad array of institutions impact entrepreneurial activities.

3.5 Institutional Approaches in Entrepreneurship Studies

Institutional approaches for understanding entrepreneurship are becoming more appreciated. Alongside this, the foregoing discussions have illuminated the wide plethora of institutional theory, which is born from varied disciplines ranging economics, sociological and political notions. In turn, these theoretical diversities leave room for multiple areas of application where introducing institutional approaches to comparative international entrepreneurship (Herrmann, 2019; Szyliowicz & Galvin, 2010).

Despite this, empirical assessments of the relations between institutions and entrepreneurial patterns often draw on an insightful but relatively *narrow* concept of institutions and siloed applications of institutional theory. Subtle differences defining varied institutional frameworks remain under appreciated, and the extent to which different institutional frameworks can promote similar outcomes have become under explored. This suggests that a more nuanced comparative institutional approach might be needed to capture the impact of institutions on entrepreneurship (Dilli et al, 2018;

Herrmann, 2019). The following discussion will outline the current literatures application of institutional theory in comparative international entrepreneurship studies. Given Chapter 2 has identified a ‘menu’ of institutional approaches, the discussion is structured within the bounds of a given institutional approach. This further draws attention to the hegemonic influence of certain schools of institutional theory within comparative international entrepreneurship, whilst promoting a conceptual discussion on how literature gaps can be leveraged in pursuit of applying a more encompassing parsimonious approach to institutional analysis.

3.5.1 New Institutional Economics & Entrepreneurship

As discussed in Chapter 2, new institutional economics (NIE) is primarily associated with the foundational work of North (1990), Ronald Coase (1937) and Williamson (1981). An emerging consensus acknowledges that the extent to which the institutional environment can guarantee private property and enforce contracts will reduce the ‘transaction costs’ associated with using market transactions (Coase, 1937; Williamson, 1975). To new institutional economists, institutions are the national level ‘rules of the game’ for society, which are human creations devised to shape societies interactions (North, 1991). The founding fathers of NIE, Douglas North, Oliver Williamson and Ronald Coase recognize the existence of two strands of institutions, formal and informal. The application of NIE in entrepreneurship studies have however tended to concentrate on formal institutions, rules and regulations that affect the choice of governance arrangements through which economic activity is organized. In this literature, institutions and institutional change have generally been analysed as way in which market imperfections and transaction costs, such as informational asymmetries, uncertainty and bounded rationality are reduced by formal ‘man-made’ institutions

(North, 1990). These typically take the form of private property rights and the rule of law in entrepreneurship literature.

Emphasising the role of institutions in the process of social action, NIE has proved a powerful analytical framework for the study of institutional influence. The dichotomy between formal based and informal based institutions has contributed a neat contextual setting, providing a coherent backdrop. As such, comparative international entrepreneurship scholars accounting for the institutional environment have typically used the new institutional economics theory as the framework of analysis. It is typically argued that entrepreneurs need to recognise and act per institutions to obtain 'legitimacy' (Bruton & Ahlstrom, 2003; North, 1991). From the context of NIE, legitimacy can be defined as "a generalised perception or assumption that the actions of an entity are desirable" (Suchman, 1995). Here, legitimacy is a key determinant, particularly for new ventures, as it signals the value of a venture to important stakeholder (Rao et al, 2008). It is from this perspective that NIE provides its main contribution to comparative international entrepreneurship studies, and forms the theoretical framework within which NIE based frameworks are developed.

For example, McMullen et al (2008) used NIE to study the effects of government restrictions on entrepreneurial freedom, with Ireland et al (2008) assessing the influence of several formal and informal institutions on entrepreneurial activities. Extending the scope to Russia, Aidis et al (2008) explore the ways in which institutions and networks influence entrepreneurial development. Using the work of Douglas North (1990), they develop probit regression models to examine the importance of both formal and informal institutions. Their results suggest that Russia's institutional environment is imperative to explaining its relatively low levels of entrepreneurial development. However, most interestingly, they find Russia's business environment and its consequences for the role

of business networks contribute to the relative advantage of entrepreneurial ‘insiders’ over ‘outsiders’, as measured by new business start-ups.

Adopting a similar New Institutional Economics ‘macro-level’ lens, yet with more of an emphasis of private property rights and formal structures of Governmental organisation, Estrin et al (2013) extend the work of Aidis et al (2008) to explore whether social networks compensate for weaknesses in formal institutions. Their framework generates hypotheses at the national level on the negative impact of weak private property rights, greater government activity and higher levels of corruption on entrepreneurial aspirations to increase employment. Applying a multilevel estimation framework, they find that the relationship between growth aspiring entrepreneurs and institutions is "complex". According to their results, entrepreneurs benefit simultaneously from smaller governments and higher private property enforcements. Similarly to the results of Aidis et al (2008) and Autio & Acs (2010), Estrin et al (2013) find that social networks mediate some but not all deficiencies in the institutional environment.

However, it has been the case with these two studies that the country sample includes a consistent set of countries based on approximate equal levels of economic development. Given calls to increase the sample to include a broader basket of countries for cross-country comparison (Terjesen et al, 2016), Casero et al (2013) were one of the first to include a large country sample where they control for groups of countries classified according to their economic development. In particular, they set out to explain the link between entrepreneurship and economic growth with institutions acting as a mediating variable. The results suggest evidence that some institutional variables that influence business creation depend on the countries developmental stage. In developing nations, formal institutions such as education and health services act as more critical institutional factors. In transition economies, the integrity of the legal

system and the strength of contracts remain more influential institutions, whereas in develop economies the size of the government and availability of credit have more influence on Global Entrepreneurship Monitor (GEM) based variables.

With a similar methodological approach, De Clercq et al (2013) investigate the moderating roles of a country's institutions, as measured through the NIE formal and informal dichotomy. This study considers the relationship between people's access to resources and their likelihood to start a new business, with particular interest into how the relationship maybe influenced by North's (1990) characterisation of formal and informal institutions. Using a multi-source panel data set, their results indicate that access to the different types of capital (social, financial and human) increases new business creation. A country's institutions appear to leverage both individual human capital and social capital for the decision to start a new business. Formal institutions inform the extent to which individuals can complement their personal resources with resources developed via the institutional environment. Informal institutions however determine the extent to which the resources embedded with the institutional environment can be distributed and distributed across economic actors.

Whilst these studies have tended to concentrate their efforts on explaining the levels of entrepreneurship, several studies have found that institutions also influence the types of entrepreneurship undertaken. For example, Chowdury et al (2014) make the case for the existence of disparate varieties of entrepreneurship by exploring and analysing three distinct varieties of entrepreneurship largely ignored by previous NIE based studies: new firm start-up, self-employment and early stage entrepreneurial activity. Using the NIE formal/informal classification, their results suggest that institutional factors influence the 'varieties of entrepreneurship' differently. Freedom from corruption, property rights and fewer start-up procedures are positively related to nascent new firm

ownership. Furthermore, property rights protection is significantly related (positively) related to new firm start up, with regulatory burden seemingly having a positive impact on self-employment but negatively related to new form start-up.

Similarly, Autio & Fu (2014) investigate the influence of economic and political based formal institutions on the prevalence rate of formal and informal entrepreneurship. Across a sample of 18 Asia-Pacific countries, they find that the quality of institutions has a substantial influence on both types of entrepreneurship (formal and informal). Their results show that one standard-deviation increase in the 'quality' of economic and political institutions could double the rates of formal entrepreneurship and half the rates of informal entrepreneurship. This shows that if institutions are lacking in quality, more entrepreneurs will choose not to register and become 'informal' entrepreneurs. With similar respect to the impact on the types of entrepreneurship, Simon-Moya et al (2014) show that higher levels of economic freedom, or to use the phrase of Estrin et al (2013), 'strong formal institutions' are associated with higher levels of opportunity entrepreneurship. High level of private property protection, flexible legislation for business procedures and general openness to trade leads to higher levels of entrepreneurship that promote innovation vis-à-vis necessity based entrepreneurship. Thai & Turkina (2014) however provide an empirically supported model, encompassing a wider range of macro-level determinants that shows how formal entrepreneurship and informal entrepreneurship are driven differently. Like Simon-Moya et al (2014), Thai and Turkina's (2014) results show strong support for the argument that the same institutional factors have varied influence on formal entrepreneurship than on informal entrepreneurship. Demand-side factors (economic opportunities), supply side factors (resources and abilities derived from institutions), culture and governance quality influence both rates of formal and informal entrepreneurship. However, the statistical strength varies dependent upon the type of entrepreneurship and therefore

is consistent with the view of other studies (e.g. Autio & Fu, 2015; Simon-Moya et al, 2014; Chowdury et al, 2014; Dilli et al, 2018) that different types of institutions offer different entrepreneurial choices.

Against the backdrop of formal pro-market institutions, Dau & Cuervo-Cazurra (2014) expand the work on examining the role of institutions upon types of entrepreneurship by extending the sample towards 51 countries across a larger time period. Like the other NIE based studies, Dau & Cuervo-Cazurra (2014) examine the effects of 'pro-market institutions on both formal and informal entrepreneurship. These authors break down their formal pro-market institutions into two main components: economic liberalisation and governance levels. Similarly to Thai and Turkina (2014), their results show that institutions have 'one best way' and that is liberal, market based institutions. They find that economic liberalisation positively impacts both formal and informal entrepreneurship, while governance levels have a positive impact on formal entrepreneurship but a negative effect on informal entrepreneurship. Furthermore, they show that governance levels reduce informal entrepreneurship to a greater extent than the increase formal entrepreneurship, resulting in a net reduction in entrepreneurial activity (Dau & Cuervo-Cazurra, 2014). Fuentelsaz et al (2015) find that improvements in formal institutions, such as property rights, business freedom, fiscal freedom, financial and educational capital positively influence the rates of opportunity entrepreneurship that is usually considered to be of greater 'quality' and more closely related to economic development in a country. In contrast to these studies, Aparicio et al (2016) find that informal institutions have a higher impact on opportunity entrepreneurship than formal institutions. Using the conceptual framework of new institutional economics, they analysed the influence of informal and formal institutions on opportunity entrepreneurship, which at the same time allow the achievement of economic growth (Aparicio et al, 2016). Their research generates three key results. One, a positive relationship be-

tween opportunity entrepreneurship and economic growth. Two, a positive relationship between institutional factors and opportunity entrepreneurship; and three, variables such as control of corruption, confidence in one's abilities and ability to obtain credit promote a positive effect of opportunity entrepreneurship on economic growth. These results suggest that by joining these two sides of entrepreneurship research together, as suggested by Carlsson et al (2013), it is possible to suggest that strong formal and informal institutions encourage growth by leveraging an effect on entrepreneurship.

Where these studies have tended to emphasise more regulatory 'formal' NIE based institutions, Dheer (2017) proposes that the cultural context of a nation moderates the effects of antecedents such as corruption, education and political freedom. Consistent with this argument, Dheer (2017) investigates the role of individualism-collectivism in moderation the effects of the institutional environment, accounted for by political freedom, corruption and education, on entrepreneurial activity across nations. This study makes a novel contribution to the entrepreneurship literature. First, it recognises the role formal institutions play in determining the level of entrepreneurial activity across nations. However, unlike extant studies, it emphasises that the role and effect of formal institutions is contingent on the cultural framework of society. Drawing on cultural theory (Markus & Kitayama, 1991; Fiske & Taylor, 2013), their results suggest that individualism positively moderates the effects of political freedom, negatively moderates the effect of corruption and positively moderates the effects of education on the rate of entrepreneurial activity, as measured by GEM's total entrepreneurial activity (TEA) measure. Overall, whilst emphasising the NIE strand of institutional theory, Dheer (2017) findings suggest that the effects of formal institutions is shaped by more informal cultural institutions within society.

In sum, whilst an array of findings are given, the nature of this survey highlights several important implications for this thesis. Firstly, it is clearly and most profoundly recognised that formal institutions play an important role in determining the propensity to be entrepreneurial. In turn, this helps give some explanation to the diversity of entrepreneurial activity across nations. Secondly, given the formal conception of institutions is predominately emphasised, has led to overlooking the role of informal institutions. In this pursuit of specifying the most important formal institutions has therefore placed little emphasis on the institutional environment as a whole, that is, how these different institutions interlink through functional relations to constitute the 'overall' institutional framework. Institutions are tested individually and in isolation. As a result of this yields the third point, in that when identifying the link between specific institutions, studies tend to specify at which end this relationship is most powerful. Differently, formal institutions are more conducive where they are 'liberal', 'pro-market' and overall they have 'one-best-way'. Indeed, these relationships are linear and 'strong' institutions are those that are most 'liberal'. It promotes a '*convergence*' view of institutions. Whilst a broad set of institutions are surveyed from this perspective, they all stress the implication that a *narrowing* down towards a few 'best' sets of institutions is indeed one that proposes a 'converge' argument, and therefore is argued to be a *restrictive concept*. Policy responses would emphasise deregulation and liberalisation, yet is this wholly appropriate? Fourthly, there is a consensus that the rule of law and private property rights matter; the most prominent formal institutions. Yet, developed capitalist countries are built on such very premise. This tells us little on how present industrialised countries can differentiate to promote their entrepreneurial society.

3.5.2 New Organisational Institutionalism & Entrepreneurship

A field established via the disciplines of organisational theory and sociology, new organisational institutionalism focuses on organisational forms and practices rather than the national level ‘rules of the game’. Here, institutions are established ways of acting and transacting stemming from shared ‘regulative, cognitive and normative frames’ (Morgan & Kristensen, 2006). The sharing across organisations of common rules, traditions and norms provides the institutionalization of organisation forms, ultimately because it provides reward. Conformity, or ‘institutional isomorphism’ (DiMaggio & Powell, 1983) increases organisational legitimacy, rents from resources and transactions that ultimately extends the survival of the organisation (Meyer & Rowan, 1977). These institutionalized behaviours are guided by normative pressure and cognitive thought systems (Scott, 1995; 2008) rather than through NIEs perspective of formal institutions.

Alongside NIE, new organisational institutionalism is a commonly featured framework for comparative international entrepreneurship studies. Emphasising the regulative, cognitive and normative institutional frames, comparative international entrepreneurship has devoted much of its institutional attention by lending theoretical application from the prominent work of Scott (1995). For Scott (1995), institutions consist of “cognitive, normative and regulative structures and activities that provide stability and meaning in social behaviour” where institutions are transported by various cultures, structures and routines operating at multiple levels of jurisdiction (Scott, 1995, p. 33). These three parameters are formally known as Scott’s ‘three pillars’.

It is from these structures that comparative international entrepreneurship studies evaluate the institutional influence on the decisions of entrepreneurs. Authors have often applied Scott's pillars to show the differences between the entrepreneurial orientation of comparative sets of countries residents. The work of Kostova (1997) proposed the concept of a country institutional profile to analyse how the normative (value systems), regulative (government policy) and cultural-cognitive (shared social knowledge) pillars effect domestic business activity. From this, Busenitz et al (2000) developed a validated measure of a countries institutional profile for entrepreneurship. This study introduces statistical measures of the country institutional profile consisting of the regulatory, cognitive and normative dimensions. By providing a three-dimensional institutional profile, the authors clarify the distinct roles that institutional dimensions play in determining level of entrepreneurship across countries. The development of their factors, with the inclusion of reliability, discriminant and external validity statistics provides researchers with a valuable resource for exploring why entrepreneurs in one country may have a competitive advantage over entrepreneurs in other countries. Specifically, it allowed comparative entrepreneurship scholars to query how specific country-level institutional differences contribute differently to levels and types of entrepreneurship. The Busenitz et al (2000) article gave way to a fresh wave of new organisational institutionalism studies in comparative international entrepreneurship. The are as follows.

Spencer and Gomez (2004) draw on Busenitz et al (2000) construct of a country institutional profile to identify normative, cognitive and regulatory institutional structures that may influence a country's entrepreneurial activity. Their results show that Scott's pillars, alongside economic factors, play distinct roles in promoting entrepreneurial activity in a country. Cognitive institutions explained the prevalence of small firms in a country, as well as the number of new companies listed on the

country's stock exchange. Normative institutions, consisting of four items identifying public attitudes toward entrepreneurial activities, was associated with self-employment rates. Regulatory institutions were positively associated with new listings on the country's stock exchange, yet negatively associated with self-employment forms of entrepreneurship.

Where these studies predominantly concentrated their data sample on industrialised countries, Manolova et al (2008) validated the Busenitz et al (2000) instruments to measure the country's institutional profile in three Eastern European emerging economies. They empirically validate an instrument for measuring country institutional profiles for the promotion of entrepreneurship in a sample of 254 business students in Bulgaria, Hungary and Latvia. Results from confirmatory factor analysis suggest high reliability and construct validity of the institutional measures. Their research finds important distinct differences in the three dimensions across the country sample, reflecting their regulatory structures, cultural values and normative traditions in promoting entrepreneurship. The focus on emerging countries was further extended by Gupta et al (2012) whom compares the institutional environment for entrepreneurship, focussing on Scott's pillars, in South Korea and the United Arab Emirates.

However, as also argued by Bruton et al (2010), there has been a growing demand to study the impact of institutional dimensions on entrepreneurial activity using wider cross-national data. Several studies have aimed to fill this void through the new organisational institutionalism strand of institutional theory. Using the Global Entrepreneurship Monitor (GEM) and World Values Survey, De Clercq et al (2010) include regulative, cognitive and normative frames as moderating effects in the relationship between associational activity and new business activity in emerging economies. They find a positive relationship between a country's associational activity and new business

activity, with the relationship stronger for higher regulatory and normative institutional burdens and lower cognitive institutional burdens. Furthermore, Stenholm et al (2013) develops a “novel” multidimensional measure of the entrepreneurial environment that reveals how difference in institutional arrangements influence both the rate and the types of entrepreneurial activity in a country. Drawing on Scott (1995), their newly developed measures examines the regulatory, normative and cognitive dimensions of entrepreneurial activity. Their results suggest that differences in institutional arrangements are associated with the differences in the rates and types of entrepreneurial activity across countries. They find that an environment with regulative arrangements that support entrepreneurial activity matter more than other country level institutions, such as the cognitive and normative dimensions. However, for the formation of innovative, high growth new ventures, the regulative environment matters very little.

Valdez & Richardson (2013) similarly used the organisation institutionalism literature to gain a greater understanding of the determinants of macro-level entrepreneurship. It was their aim to understand which aspects of national environments make countries most fertile for entrepreneurship. For them, national differences in entrepreneurial activity may represent differences in social, cultural and economic climates. Like Spencer & Gomez (2004), Valdez & Richardson’s (2013) findings suggest that a societies normative, cultural-cognitive, and regulative institutions are related to entrepreneurial activity. Specifically, the statistical relationship between the normative and cognitive frames is higher than regulative institutions. Their results suggest that the difference in belief systems, value patterns may play a greater role than regulatory measures aimed at economic opportunity and reducing transaction costs. This study supports the proposition that when a country’s citizens generally view entrepreneurs as favourable, whilst feeling knowledgeable about entrepreneurship, they are more likely to be involved in new venture creation. This proposition has clear implications for the role of public

policy, which is often focussed on regulatory measures (Dilli et al, 2018). Indeed for these, entrepreneurship may benefit from altering the norms and normative institutions, which in turn may improve the climate for entrepreneurs.

Following with the same cross-national rationale, Urbano & Alvarez (2014) extend the organisational institutionalism approach with the use of logistic regression. The purpose of their study was again to examine the influence of Scott's (1995) pillars on the probability of becoming an entrepreneur. Their findings demonstrate that a 'favourable' institutions increase the probability of being entrepreneurial. Specifically, fewer procedures to start a business (regulative dimension), higher media attention for new business (normative dimension), and less fear of business failure (cultural-cognitive) combine to ensure a greater probability of new business ventures. Again, using Global Entrepreneurship Data (GEM) across a 30 country sample, their study advances the international entrepreneurship literature by providing new evidence on the role of environmental factors that affect entrepreneurial activity. In this line, Urbano & Alvarez (2014) further complement the institutional focussed entrepreneurship literature from within the current wave of new organisational institutionalism perspectives. Sambharya & Musteen (2014) further examined the impact of the normative, regulatory and cognitive aspects of the institutional environment on the entrepreneurial activity across different countries. Using GEM data, they find that the cognitive dimension is a strong predictor of the opportunity driven entrepreneurial activity across countries. In contrast, the normative and cognitive pillars of institutional theory appear to be better predictors of necessity driven entrepreneurship.

Again, the topography of these studies highlights several points of interest moving forward. Firstly, it is clear that new organisational institutional perspectives are as readily used in entrepreneurship studies as is new institutional economics perspectives.

The reason for this can be explained in the fact it carries forth a direct and ‘neat’ framework to study institutions. In turn, secondly, Scott’s three pillars approach is a readily used outline for studying entrepreneurship in these studies. As a result of this, there is the similar issues as NIE based studies in that there is a lack of appreciation for the overarching institutional environment. There is little consideration given to how these separate institutions may form an overall structure through ‘complementarities’ they may take. A symptom of this gives a the third point that again, there is an emphasis of these studies tending to frame their studies in such a way as to emphasise specific institutions vis-a-vis neighbouring institutions, and as a result, overemphasising in which ways these institutions maybe more powerful. For example, regulative institutions have larger influence where there is less regulation; or normative institutions are more powerful where society is more conducive towards business. Again this lends to the idea that societies should ‘converge’ towards a ‘one-best-way’ of institutions. Indeed it supports a ‘convergence’ view of institutional effectiveness. Again whilst a broad set of institutions are surveyed from this perspective, they all stress the implication that a *narrowing* down towards a few ‘best’ sets of institutions is indeed one that proposes a converge argument, and therefore is argued to be a *restrictive concept*.

3.5.3 Comparative Institutionalism & Entrepreneurship

The third potential institutional approach is comparative (capitalist) institutionalism, a fruitful and emergent discourse originating from socioeconomics and political economy. Where new institutional economics (NIE) that focuses on the *convergence* upon the institutional effectiveness of formal and informal institutions, comparative institutionalism approaches seek to explain and describe *diversity* in the socioeconomic architecture of countries. From the NIE perspective, Germany, UK and Norway have similar

institutions as measured by the convergence perspective of institutional effectiveness (e.g. rule of law, private property rights). Conversely, the comparative institutionalism lens highlights significant differences in the political economic architecture of these three countries. The type of resources that are provided and how economic activities are organized and controlled is unique to each country. Formally, comparative institutionalism seeks to identify the large intrinsic diversity amongst capitalist countries, and it is these differences that provide a natural blueprint for understanding how institutions matter for international entrepreneurship. From a theoretical perspective, institutions matter because societal institutions provide unique resources, competencies and practice norms to entrepreneurs (Chowdhury et al, 2014; Terjesen et al, 2013; Lim et al, 2010). In turn, the specificity of the host institutional environment impacts the challenges that entrepreneurs face when emerging, transacting and establishing local linkages (Yueng, 2002).

However, despite the attempts of comparative international entrepreneurship research to explain the effects of cross-country differences of entrepreneurship, comparative institutionalism approaches remain significantly under-represented in the comparative international entrepreneurship domain. Notwithstanding the calls for encompassing a broader institutional context in entrepreneurship (Herrmann, 2019; Szyliowicz & Galvin, 2010; Terjesen et al, 2013; Su, Zhai & Karlsson, 2017), studies taking a comparative institutionalism perspective are limited to only the efforts of four studies. It is clear that against the backdrop of potential institutional approaches, comparative institutionalism is an overlooked strand of institutional theory.

Lending the framework of Whitley's (1999, 2007) national business systems (NBS) approach to comparative institutionalism, Bowen & De Clerq (2008) seek to investigate whether a country's institutional context influences the extent to which entrepreneurs

allocate their efforts towards high-growth activities. By using the NBS approach as a framework to identify the relationship between specific institutional dimensions and the allocation of entrepreneurial effort, they find a positive relationship between the level of both financial and human capital, and the proportion of high-growth entrepreneurship. In doing so, they offer a more encompassing view of how the institutional context influences the nature of a country's entrepreneurial endeavours. Their analysis highlights how the comparative institutionalism literature, in the form of Whitley's NBS approach, can be leveraged to explain variations across countries with respect to their 'economic prosperity'. Despite the limited cross-sectional sample, Bowen & De Clerq (2008) are the first to acknowledge the wealthy prospects comparative institutionalism literature has to offer to the comparative international entrepreneurship literature.

Similarly to Bowen and De Clerq (2008), Lim et al (2010) further take a national business systems perspective to investigate the relationship between institutional environment and the entrepreneurial cognitions which lead to an individual's venture creation decision. Taking a sample from eight countries, they examine the extent to which institutions, such as the financial and education system, influence venture creation decisions. They find that the legal system, financial system and education system all have statistical influence upon entrepreneurial cognitions. By taking a socioeconomic approach to institutions, they provide an alternative and novel way of investigating the various contextual influences that impact entrepreneurship activity.

Where these two studies have blended the NBS comparative institutionalism work, Terjesen & Hessels (2009) draw upon the Varieties of Capitalism (VoC) (Hall & Soskice, 2001) literature in an attempt to explore the differences in the proportion of export-oriented early stage entrepreneurial activity in 12 Asian countries. Using the 'industrial relations', 'training & education', 'corporate governance', 'inter-firm relations' and

‘employee relations’ institutional sub-spheres, this study explores how differences in institutional structures relate to new firm entrepreneurship. Their findings suggest that countries exhibit a higher proportion of export-orientated entrepreneurial activity when industrial relations are more flexible, training institutions are of ‘high’ quality, and labour-employer relations are confrontational. In accordance with VoC, they find that national institutions affect economic behaviour, in particular firm exporting. Yet, while VoC would predict that variety in national institutional set-ups can result in similar outcomes for economic behaviour among nations, Terjesen & Hessels (2009) suggest that a linear relationship exists between the composition of a country’s institutions and new venture export. Most recently, Dilli et al (2018) similarly employ perspective from varieties of capitalism to derive a set of institutional indicators that can explain ‘varieties of entrepreneurship’. They conclude that four different ‘Varieties of Entrepreneurship’ can be identified across the Western world. Using OLS regressions, they show how these institutional constellations are related to types of entrepreneurship. They argue, alongside Herrmann (2019), that the literature on ‘varieties of capitalism’ offer a parsimonious theoretical framework to explain different types of entrepreneurship.

Drawing this together illuminates three interesting implications for this thesis. Firstly, with only four studies stemming from this comparative institutionalism perspective, it can be argued that such approach is largely overlooked. In an attempt to understand the diversity and allocation of entrepreneurial activities nationally, it is surprising that scholars do not draw on approaches which emphasise cross-national differences in institutional context. Institutions here are seen as *divergent* and broad structures. Secondly, building upon this, given how such approach conceptualises the institutional environment, can provide a natural parsimonious blueprint for further entrepreneurial studies. In an attempt to investigate institutional context, approaches which illuminate the interconnectedness and interdependence of institutional sub-

spheres can further shift the literature away from stylising an individual isolated institutional analysis akin to *convergence* based approaches. Yet thirdly, these four studies have yet to examine and test the institutional environment as a whole, that is, taking account of the institutional complementarities and potential functional equivalence drawing from a pure comparative institutionalism analysis. A formal discussion between converge based theories and diversity led approaches will be given in the next section. An overview of the varied applications of institutional theory is given by Table 3.1.

Table 3.1 Diversity of Institutional Approaches to International Entrepreneurship

Institutional Approach	Analytical Focus	Theoretical Analytical Tier	Applied Analytical Tier	Core Measures	Institutions as...	Application in IE Literature
<i>New Institutional Economics (NIE)</i>	Formal & informal institutions that mitigate the costs of transacting in a market setting and hereby lending way for varied types of entrepreneurship	National 'rules of the game' and 'transactions'	National Level	Institutional effectiveness and quality of formal and informal institutions. These usually take the form of private property rights, government organisation, economic freedom, protection from corruption	'Converge' onto institutional 'effectiveness' and quality	Aidis et al (2008); Aparicio et al (2015); Autio & Fu (2014); Casero et al (2013); Chowdury et al (2014); De Clercq et al (2013); Dheer (2016); Fuentelsaz et al (2015); Simon-Moya et al (2014); Thai & Turkina (2014); Ireland et al (2008); Estrin et al (2013); Dau & Cuervo (2014); McMullen et al (2008)
<i>New Organizational Institutionalism</i>	Analysing the impact of institutional systems that explain to dominance of different forms of institutions	National & Organizational Level	National Level	Scott's '3 Pillars': Regulatory, Normative & Cognitive (Scott, 1995)	'Converge' onto institutional 'effectiveness'	Sambharya & Musteen (2014); Spencer & Gomez (2004); Stenholm et al (2013); Urbano & Alvarez (2014); Valdez Richardson (2013); Manolova et al (2008); Busenotz et al (2000); Gupta et al (2012)
<i>Comparative Institutionalism</i>	Comparison of institutional configurations that underlines the topography of capitalist diversity - these shape the supply of inputs within an economy	National socioeconomic differences and complementarities between configurations	National socioeconomic differences	Contingent on the type of comparative institutionalism approach	'Diversity' and broad structures	Bowen & DeClercq (2008); Lim et al (2010); Terjesen & Hessels (2009); Dilli et al (2018)

3.6 Moving 'Institutional Explanations' Forward

This section identifies two overarching themes with the current trajectory of the literature. The first identifies divisions within institutional theory. One set of theories sees institutions as converging creations, and the other set sees institutions as divergent creations. Weaknesses within the application of institutional approaches can be seen to start here. The second is built upon the first issue, in that there is no justifiable application of diversity perspectives accounting for the intricacies within institutional environments. This section therefore acts as a 'critical review' by stylising key literature gap themes in a bid to move 'institutional explanations' forward.

3.6.1 *Converge versus Diversity Institutional Perspectives*

The current body of institutional work provides institutional explanations that help emphasise how different countries have developed under varied conditions and at varying trajectories. This work displays distinctive features of the institutional environment that influence the innovative capabilities of economies and shape entrepreneurial activities. However, research in this vein has attempted to explain differences in the allocation of entrepreneurial activity without a complex understanding of the nature of institutional theory and frameworks. This has led to numerous gaps in the application of institutions in comparative international entrepreneurship studies.

Firstly, much work has attempted to explain differences in entrepreneurial patterns of activity without a grounded understanding of the institutional framework within which recognises the combinations of their constituent institutional components. Work has often treated institutions as stand-alone structures which posit no endogeneity with

other institutional spheres. As the work of Boyer & Saillard (1995) suggests, institutions and the pressure for institutional change is conditioned by the interconnectedness of the institutional structures, to which form and constitute the entrepreneurial environments. Scholars writing from this perspective in international entrepreneurship often assume variation can be explained by national differences in path dependencies, technologies or social structures. In the absence of acknowledged institutional commonalities, any cross national comparisons becomes difficult (Szyliowicz & Galvin, 2010).

Secondly, much of the literature does not acknowledge the plurality and thickness of institutional theory. As foregoing discussion suggests, there is a clear dominance of certain strands of institutional theory. Comparative international entrepreneurship studies have tended to adopt both New Institutional Economics and New Organisational Institutionalism approaches, with neglect for more nuanced diversity perspectives as developed within the comparative institutionalism branch of theory. In such vain, the majority of studies adopt an approach developed in line with North's (1994) characterisation of formal and informal institutions. Others apply Scott's (1995) three pillars of regulative, normative and cognitive institutions when seeking to understand the influence on entrepreneurial activity. This has led the comparative international entrepreneurship literature to adopt a relatively *narrow* definition of institutions and their institutional setup. For example, many studies focus on a relatively narrow range of formal, regulation based institutions that shape the activities of entrepreneurs. However, institutional approaches developed in other disciplines, namely political economy, are seldom applied. Taken together, although international entrepreneurship interpretations of institutional are varied, existing literature focuses on a limited set of institutions, overlooking the nuanced diversity and complementarities between a country's institutions. Given the large differences in how certain strands of institutional theory conceptualise and define institutions, the institutional approach applied has

considerable implications for how institutions 'matter'. This raises several implications moving forward.

One, it is argued that both NIE and NOI take a narrow view of institutions, arguably pertaining to a '*convergent*' view of institutions. This is because institutions from these branches emphasise the one 'best' and perfect set of institutions or composition of an institution, which is often argued to be the most liberal and open. As such, countries should '*converge*' on the 'best' format of institutions hereby arguing there is a 'one-size-fits-all' institutional environment for entrepreneurship. This leads public policy-makers to emphasise liberalisation 'monocropping' strategies, with neglect for the interconnectedness and path dependencies of national institutions. These perspectives typically consider the quality, development and effectiveness of institutions in a country.

Two, given comparative institutionalism perspectives wish to highlight and analyse the inherent diversities between national institutional environments, these political economy approaches defines institutions as '*divergent*' creations. The comparative institutionalism literature assesses the conditions under which countries are likely to continue to have divergent sets of institutions, as there is no one specific institutional regime that is associated with superior performance of the economy (Lane & Wood, 2009; Allen & Aldred, 2012; Hall & Soskice, 2001), and speaking to debates around equifinality (Herrmann, 2019). Given there is a lack of comparative institutionalism approaches, there is a clear neglect of how institutional diversity can explain divergent rates of entrepreneurship. The emphasis of NIE and NIO, which views institutions as convergent creations, has perhaps led policy-makers to focus on reforming institutions to a certain direction, with neglect for the diversity and potential bifurcation of institutions for entrepreneurship. With high rates of entrepreneurship in non-liberal political economies, it is clear that the lack of detailed treatment of the ways institutional

diversity can explain entrepreneurship gives scholars and policy-makers a narrow view of how institutions matter. Unlike convergent perspectives on institutions, comparative institutionalism acknowledges that there are different ways of configuring institutions which breeds fertile ground for divergent trajectories of institutional building.

It is this issue of diversity 'versus' convergence that the most prominent literature gap arises. Comparative international literature has focussed on convergence perspectives, which gives a partial picture of how institutions may affect entrepreneurial activity. By contrast, the comparative institutionalism perspective may lead to expectations that there are likely to be 'functional equivalence' and a number of 'best ways' that lead to superior entrepreneurial performance. In short, the comparative institutionalism perspective does not just focus on narrow 'formal' institutions to explain entrepreneurial activity, but takes consideration of a broader set of institutional factors to assess the conditions under which entrepreneurs from different institutional environments are able to arise. A key analytical focus of comparative institutionalism is to emphasise the inherent institutional differences between political economies, and as such pays closer attention to the particular yet variety of institutional contexts within which entrepreneurs operate.

3.6.2 Application of Institutional '*Diversity*' Perspectives

The previous section has illuminated the fruitfulness of considering approaches from comparative institutionalism. That is, moving towards seeing institutions as divergent but equal creations. Whilst Bowen & DeClerq (2008), Lim et al (2010), Terjesen & Hessels (2009) and Dilli et al (2019) are the only authors to draw upon the comparative

institutionalism literature, they are not without limitations. Indeed, several gaps can be identified with how this comparative institutionalism literature is employed.

Firstly, one of the key theoretical tenants of comparative institutionalism work, namely institutional complementarities, is ignored. Whilst these studies are novel in the sense they are the first to draw upon the institutional sub-spheres introduced by Hall & Soskice (2001) and Whitley (1999) alike, they overlook the interconnectedness of individual institutions. For example, these scholars use variables to define trade union centralisation, asset specificity of countries education systems and regulatory climate. Yet their research has focussed on testing the statistical influence of institutions individually, with a large absence of how individual institutions interact. If studies are to account for the institutional context, then overlooking how institutions complement one another is a key limitation of their studies.

Secondly, these studies fail to assess any potential 'functional equivalence' of varied institutional frameworks. According to Hall & Soskice (2001) and Hall & Gingerich (2009), there is more than one way to configure a nation's political economy to increase macroeconomic performance. For comparative institutionalism scholars, there is no one institutional regime that is associated with superior performance, but rather institutional diversity can lend itself to varied economic patterns of activity, such as different competitive advantages or economic logics. Comparative institutionalism is therefore less about the 'one-best-way', but rather how institutional diversity influences economic activities of a nation. Yet, Bowen & Clerq (2008), Lim et al (2010) and Terjesen & Hessels (2009) merely employ a classical linear regression technique, which by definition assumes there is a 'one-best-way'.

Thirdly, whilst it is appreciated that the comparative institutionalism literature proves a novel strand of institutional theory, it should be noted, as Chapter 2 highlights, that there are multiple comparative institutionalism approaches. These can be confined to the Varieties of Capitalism approach (Hall & Soskice, 2001), National Business Systems approach (Whitely, 1999) and the Governance approach (Boyer, 1987; Amable, 2003). As there are calls in the comparative institutionalism literature to construct a 'post-VoC' era by extending the Governance work (Bieling, 2014) of Amable (2003) and Boyer (1987), drawing upon such work for comparative international entrepreneurship research proves a potential fruitful and original approach. Drawing upon this work will also contribute further to the comparative institutionalism literature with perspectives beyond the present VoC hegemony.

Fourthly, these studies are based on limited samples. For example, Lim et al (2010) use a sample of eight countries, Bowen & De Clercq (2008) use 40 observations for their regression models, and Terjesen & Hessels (2009) examine activities in 12 Asian countries. These comparative institutionalism based studies are limited by their 'basket' of countries and the data points they employ. Thus naturally, these three studies are based on cross-sectional data, and do not explain entrepreneurship rates with a time dimension. As such, whilst comparative institutionalism brings a broader perspective to the study of international entrepreneurship, it is clear that the aim of the three studies currently seeking to explore this area have been limited by the way they employ such institutional theory.

Overall, what is lacking from international entrepreneurship research is a comprehensive assessment of the ways comparative institutional diversity impacts capabilities, forms of innovation and areas of competitive advantage. From the comparative institutionalism approach, the addition of a wider framework of institutions and the

corresponding nexus of institutional complementarities can provide the specification of how parsimonious institutional diversities are likely to shape entrepreneurs decision making. Bringing forward comparative institutionalism perspectives provides attention to the varied institutional context within which entrepreneurs may operate. In short, drawing upon comparative institutionalism remains essential to extending the trajectory of existing comparative international entrepreneurship research.

3.7 Orienting This Study

3.7.1 ‘Reconceptualising Institutional Approaches to Comparative International Entrepreneurship’

The comparative institutionalism approach holds considerable promise for improving the understanding of relations between societal institutions and entrepreneurial, economic outcomes. As is argued, comparative international entrepreneurship literature has largely overlooked institutional perspectives which underline institutional diversity in favour of convergent perspectives. In the comparative institutionalism literature, there have been surprisingly few attempts to validate the original governance based typologies (Amable, 2003) proposing the topography of capitalist political economies. As Bieling (2014) and Hancke (2009) illustrate, while the governance capitalist typologies need to be extended, it remains relevant for describing variety in national institutional frameworks. This can help provide the nuance needed for exploring the relations between institutions and entrepreneurship, where institutions are seen as diverse and complex webs creating specific economic logics.

Present influences of new institutional economics and Scott's (1995) definition of institutional spheres has promoted again here a narrow and homogeneous view of institutions, and this study intends to exploit this with fresh perspectives from the field of comparative political economy. These calls for institutional perspectives beyond an institutional economics focus are strengthened by Lim et al (2010) and Tejersen et al (2013) who suggests that political economy and comparative institutionalism have novel and interesting insights for the study of international phenomena.

This study will attempt to offer a response to these issues by providing a multilevel methodological framework and '*institutional configuration*' approach to situate the specific role of institutional context within the study of entrepreneurship, with the aim of emphasising how the allocation of resources to institutional environments that support entrepreneurship should remain a development policy imperative. The formal research aim is therefore given as:

Research Aim:

To explore the influence of national institutional environments on the levels of entrepreneurship.

The main research aim can be elaborated and explored in terms of the following three specific research objectives.

Research Objective 1:

To ascertain whether capitalist institutional *diversity* exists, and if so, how can diversities be characterised between political economies.

Research Objective 2:

To ascertain the effects of institutional *diversity* on aggregate entrepreneurship.

Research Objective 3:

To ascertain whether perspectives from *comparative institutionalism* can explain the divergent nature of entrepreneurial activity across nations.

These research objectives are used to provide a guiding framework for this research study. The next sections are concerned with providing the correct architecture to conceptualise the main research aims and objectives.

3.7.2 Comparative Institutionalism, Institutional Complementaries & Functional Equivalents

It has been appreciated that the impact of institutions can be best appreciated by drawing upon comparative institutionalism ‘diversity’ approaches. This section further demonstrates the key leitmotifs of this approach in an attempt to suitably address how the aspects of such theory can be leveraged in a bid to contextualise this institutional configurational approach.

The comparative institutionalism literature is predominantly based on institutional structures, forms and functions of a political economies production regime. Here, attention has been redirected away from the study of isolated individual institutions to the internal logics of institutional configurations as a whole. The concept of

institutional complementarities is the central theme of this debate, referring to a functional process whereby the effectiveness of an institutional form in one area is conditioned by institutions in other areas (Aoki, 1994; Boyer, 2005; Amable, 2016). This provides an institutional based theory which shifts attention away from the stylised search for a one best set or form of institutions, but rather underlining the multiplicity of equitable institutional configurations/models. Differently, comparative institutionalism perspectives bring forth the study of institutional interaction which constitutes an overall functional equivalent. It is therefore the existence of institutional complementarities which explain how and why differentiated ‘varieties of capitalism’ are present, yet equally provide potential general efficiencies to the political economy (Amable, 2016; Hopner, 2005b).

The models of capitalism debate focus on the presence of potential complementarity effects between institutions within the production regime. Per the literature, institutional complementarities maybe born through a specific organisation of skill formation (Streeck, 1991), company finance, cooperation between economic agents, exposure to competition, or forms of economic adjustment (Amable, 2003; Hall & Soskice, 2001; Hall & Gingerich, 2009). The theme of institutional complementarities is important for several reasons.

Firstly, it expresses the idea that certain institutional forms function together to underscore the nature of capitalist diversity. Capitalist diversity is based on the notion of specific forms of institutional configurations which are ‘stable’ given the presence of institutional complementarities. The stability of differentiated varieties of capitalism stems from their institutional coherence. Political economies are ‘institutionally coherent’ where their specific and unique forms of institutional configurations derive equally efficient forms of economic competitiveness. The general performance of the economy

is said to depend on the degree of institutional coherence (Hall & Gingerich, 2009). Institutional complementarity therefore gains relevance from its effect on outcomes, and coherent forms of capitalism models stems from the compatibility of the internal logics of political economies. The search for effects of isolated institutions may be misleading as effects may be due to the constellation of which the respective institutions are part (Hopner, 2005a; Stephan et al, 2015). It is therefore important that institutional applications are representative of debates within institutional complementarities and coherence.

Secondly, it is important to highlight the specific forms of complementarities to be able to explain the underlying mechanism within which institutions have an effect on specific outcomes. It is beneficial for institutional scholars to identify with specific sets of institutional complementarity in order to understand the institutional mechanisms upon which the coherence of numerous developed political economies is based. Providing an overview of institutional complementarities goes beyond the apparent dissimilarities between economies and to an appreciation of their common structural traits. Thus, scholars can appreciate how a specific configuration of institutions may give rise to specific forms of economic outcomes.

Akin to the literature, political economies are ‘institutionally coherent’ the more they resemble the structural traits of a market based system or a coordinated based system (Hall & Gingerich, 2009; Amable, 2009, 2016; Kenworthy, 2006). The institutional complementarities associated with these sets of capitalism(s) are indeed specific, they define the distinctive type of capitalism or institutional environment. Like Hall & Soskice, one political economy is based on the accumulation of patient capital and specific skill investments, whilst another relies on general skill provision and fast adaptation of markets as determined by marketized forces. In the former type, agents

are incentivised to invest in specific skills through an array of protective institutions namely rigid labour markets, job security, wage protection and patient led capital. These institutions enable long term strategies through reinforcing strategic coordination amongst firms, the financial system and the labour market. These are complementary to one another given each institutional form reinforces efficiency of the other for a competitive outcome (Amable, 2016). For varieties of capitalism scholars, these are called ‘coordinated market economies’ (CME), in contrast to the market led model of ‘liberal market economies’ (LME). Again, these are derived by the specific form of institutional complementarities which define the structure of the political economy.

In the market based mode of capitalism, low product-market regulation exposes firms to increasing competition, making them more sensitive to adverse market shocks. Flexible labour markets and decentralised wage bargaining systems allow firms to both alter their prices, but also adjust their quantity of labour in the event of adverse changes in the market dynamics. Liberal product markets are therefore complemented by a labour market which provides the ease of flexible adjustment. This has been empirically validated by Amable et al (2011). In addition, financial systems dominated by short term capital aimed at seeking immediate financial returns make firms adjust their strategies accordingly. Firms are exposed to a pure profit maximisation motive, which is supported by allowing managers to control costs, particularly through labour market adjustment. This economic model consequently favours fast adjustment, rapid structural change and entails a high degree of risk for the investment in specific skills. For this reason, the education system complements its neighbouring institutions by investing in general skills. This is complementarity for two reasons. Firstly, general skill profiles dampen economic downturns as they support firms in adapting to a new market paradigm. Secondly, individuals with general skills have reduced bargaining

power relative to specific skill profiles, which underpins the control of firm based costs (Estevez-Abe et al, 2001; Hall & Soskice, 2001).

The coordinated mode of capitalism is organised per a different set of complementarities. Semi-governed and protected product markets implies some flexibility of the productive system, which is not only achieved through labour market shedding and market adjustments as exercised in the market based model. Instead, retraining of a highly skilled workforce in a market reinforcing manner plays an imperative role in the adaptability of firms to competitive pressures. Training labour with the institutionalisation of specific skills is supported by a combination of high employment protection, centralised wage bargaining and active labour market policies. This array of ‘insurance’ based institutions complements the investment and sunk costs towards the creation of skill specific assets. The financial system further complements the rest of the production regime by providing patient led capital. This enables firms to develop long-term strategies in the absence of being exposed to short-term profit constraints. These are stylised by Table 3.2.

Modes of capitalism therefore constitute an important benchmark for understanding the effect of institutions on entrepreneurship. Identifying and appreciating the impact of institutions on entrepreneurship requires a better understanding of the varieties of institutional ‘environments’ and the forms of institutional complementarities within which define them. Research into the effect of institutions should take note of the overall mode of institutional configuration and move beyond institutional research based on single institutions in isolation (Stephan et al, 2015; Syliowicz & Galvin, 2010). The institutional environment, dominated by a matrix of complementing institutional sub-spheres, give rise to specific forms of incentive and entrepreneurial endowments. It is a result of this that entrepreneurs are provided with unique forms

Table 3.2 General Features of Coherent Political Economies

Model of Capitalism	Overview of Defining Feature
Market Based Capitalism (akin to LME)	<ul style="list-style-type: none"> • Low Product Market regulation making firms more sensitive to supply and demand shocks/changes • Labour markets are flexible and decentralised, which allows labour to become the key instrument of macroeconomic adjustment, which underpins product markets prominence of cost-based competition or unique product differentiation • Market pressures make firms adapt their business strategies to cost pressures, promoting industrial dynamism • Quick reacting financial markets allow fast restructuring and the provision of rapid capital, supported by general skill profiles • Education systems focus at building a skill profile of low asset specificity which underpins the fast restructuring of industrial bases and structural change • Education system reinforces the inactiveness of labour market spending by institutionalising a skill profile which matches the changes in derived requirements of economic sectors • Lifelong and specific learning is encouraged given the fluidity of labour markets, empowering individuals to accumulate knowledge to maintain job positions • Low specific skill investment, hence no hold-up problem, less need for high employment and wage protection
Coordination Based Capitalism (akin to CME)	<ul style="list-style-type: none"> • Strong external competitive pressures, and semi-governed product markets implies some flexibility for the production regime which is not only achieved through lay-offs and market adjustments (as in market-based) • Training and retraining of a highly-skilled workforce, as reinforced by the institutionalised skill regime of the education system plays a crucial role in the adaptability of workers and incrementalism of key 'legacy' industries • Protection of specific investments in labour by governments or industrial bodies through rigid labour markets (high legal protection of those employed), social protection, active labour market spending and centralised wage bargaining • Coordinated wage bargaining system allows solidarity wage setting which favours innovation and productivity of industries • Centralised and 'patient' financial markets provides the economy with long-term finance to build and enhance specific sectors • Institutionalised frictions against fast structural change provides businesses and employees with security and social cohesion • Financial systems not sensitive to the profitability of industries enables long-termism strategies akin to the demands of central authorities, accelerated by high asset specificity of labour • Employment protection is an incentive to invest in specific skills, centralisation favour the definition of useful specific skills as required by the economic base

of institutional logic under varied models of capitalism. Institutional diversities, institutional coherence and institutional complementarities, key theoretical tenants of the comparative institutionalism literature, can provide fruitful insight for the study of international comparative entrepreneurship. It is from this identification that this study can take context.

The Constituent Sub-spheres of the Institutional Environment

Lending from the comparative institutionalism of Amable (2003), the institutional environment can be defined by institutional sub-spheres including product markets, labour markets, education system and the financial system. This institutional framework also provides the appropriate structure that guides how this study will define the institutional environment that facilitates the gathering of empirical data and the aggregate analysis of research findings.

As noted earlier, the Governance-inspired institutional approach distinguishes between varied institutional sub-spheres. Consistent with this reasoning, the national institutional environment in this study is conceptualised and examined in terms of the characterisation put forward by the leading comparative institutionalism work of Amable (2003) and their implementation characteristics.

The reason this study has chosen Amable's (2003) as the central institutional framework is three-fold. Firstly, there have been numerous empirical rejections of the traditional logic of varieties of capitalism. The basic assumption of the VoC work is that different economic systems are characterized by institutional complementarities, leading to a stability of paths. Yet, empirical tests of VoC, such as Witt et al (2017)

yield models of capitalism beyond the LME-CME dualism, and the institutional complementarities of Hall & Soskice cannot be explained from this perspective, but can with governance perspectives as they encourage 'binary classifications' (Amable, 2003). This has lead authors to suggest that comparative institutionalism is in the 'post-VoC' era (Bieling, 2014), acknowledging that competing conceptions of the institutional environment, such as Amable (2003), are as important. Related to this point, secondly, there is growing calls (e.g. Witt & Gregory, 2016) for studies to empirically test each comparative institutionalism perspective as a way to contribute to discussions on institutional change over time (e.g. Schneider & Paunescu, 2012). Given this study attempts to measure entrepreneurship and institutions independently, it is felt that the measurement of the under-represented Amable (2003) perspective would answer calls to analytically and empirically contribute to the comparative institutionalism literature (Nolke, 2015). Thirdly, taking consideration from Amable (2003) answers calls by Urbano & Alvarez (2014) and Urbano et al (2019) to introduce comparative international entrepreneurship to institutional perspectives beyond the VoC framework.

Table 3.3 highlights the selection of institutions, against a comparative set of leading models of comparative institutional analysis¹. As argued, the field of comparative institutionalism is defined by the width of methodological approaches, definitions of the institutional environment and the plethora of institutional dimensions chosen.

Methodologically, institutions are difficult to quantify and measure. Indeed, there is no clear-cut definition of the institutional sub-spheres make-up. Studies therefore can often leave a methodological void between the 'concept' of institutions and their

¹It should be noted that the 'welfare system' was not selected as an institutional sub-sphere in this study given the lack and width of data available to support any meaningful latent variable development. To maintain the broad selection of countries and the time series depth, it was decided that 'social protection/welfare system' should not be included in a bid to maintain a range of country selection and multi-dimensionality allowed by such other institutional sub-spheres.

Table 3.3 Institutional Dimensions of Leading Models of Comparative Institutional Analysis: Institutional Sub-sphere Operationalisation

Selected	Dimension	Whitley (1999)	Hall & Soskice (2001)	Amable (2003)	Witt & Redding (2013)
Yes	Education & Skill Formation	Yes	Yes	Yes	Yes
Yes	Employment Relations/Labour Markets	Yes	Yes	Yes	Yes
Yes	Financial System	Yes	Yes	Yes	Yes
Yes	Product Markets			Yes	
	Interfirm Networks	Yes	Yes		Yes
	Internal Dynamics of the Firm	Yes	Yes		Yes
	Ownership & Corporate Governance	Yes	Yes		Yes
	Social Capital	Yes			Yes
	Social Protection			Yes	
	State Role	Yes			Yes

empirical structure. Put differently, there can be issues of construct validity. Given institutions are latent constructs, this study makes use of principal components analysis (PCA) in an attempt to quantify institutional dimensions within each sub-sphere. However, it then becomes an issue behind 'which' variables to select in a bid to structure said institutions. Authors has the choice behind which (manifest) variables to select for data treatment, but do not have a direct choice behind any principal components created as these are outcome variables of the PCA process. Authors therefore have a decision and discretion behind filling the theoretical-empirical gap through their variable selection.

Product Markets

Product markets have become a key focal point when observing the diversity amongst countries. Productivity gains, absorption of asymmetrical shocks, real convergence and increased innovation have all been attributed to the composition of product markets, that is, where product factors are exchanged. Open, liberal product markets make firms more susceptible to market pressures, and thus the potential adversity of demand and supply shocks which are primarily absorbed via a change in prices. If prices fail to ‘cushion’ adverse shocks, adjustment via quantities becomes the key mechanism of change, which is primarily concerned with labour force adjustment. As such, product markets have become an emergent theme when discussing structural reforms, institutional change and diversity, especially within the European Monetary Union (EMU). Overall, product markets may differ substantially across countries with respect to intensity of competition. These differences may stem from differences in the average size of firms, or the type of technology used, or more basically from variations in competition regulation (Nicoletti et al, 2000).

Labour Markets

The labour market has become a key institutional point of analysis within political economy and economics. It is now widely acknowledged that the structure of labour market institutions is of significant importance to many contemporary economic issues. For example, achieving inclusiveness and equity has been seen to require constructing labour market institutions that support people in and out of work (Berg, 2015). Furthermore, neoclassical beliefs hold that labour markets should be deregulated and organised so the economy and firm can benefit most from the dynamic process of

creative destruction, increasing pressure to maintain decentralised wage bargaining systems and flexible labour protection (Amable, 2009; 2016; Bassanini & Ernst, 2002). There is also the heterodox thought that wage bargaining systems under the Economic Monetary Union (EMU) should allow for the centralisation of wage-setting, hereby allowing the sovereignty over real exchange rate (RER) control, and therefore national competitiveness (Hancke, 2013; Soskice, 1990). As such, labour market institutions matter in relation to a range of economic issues.

Labour markets are important for three reasons. Firstly, they provide the functional requirement of skills and human capital in an advanced capitalist economy (Berg, 2015). Secondly, they provide labour with (potential) political power through trade unions and centre-left politics (Soskice, 2007). Thirdly, labour markets provide a natural macroeconomic adjustment mechanism through both wage moderation and changes in labour employment (Hancke, 2013). Labour markets have therefore become a fundamental point of attention for those studying the functioning of the Eurozone, where naturally, other forms of macroeconomic adjustment have transitioned to supranational European polities (monetary policy, exchange rates and to a lesser extent, fiscal policy).

Education System

The study of education systems provides a natural point of analysis for understanding knowledge accumulation and skill formation within countries. There is growing acceptance that knowledge accumulation leads to innovation and technological progress, leveraging economic growth where other factors of production remain constant (Grossman & Helpman, 1994; Romer, 1994). Despite this relationship, studies into the structure of educational systems remain limited.

Financial System

Financial systems provide distinctive characteristics in the comparative institutional analysis of capitalist economies. Despite globalization and the growing trend of financialisation, financial systems still attains a sizeable degree of institutional variety, particularly in relation to the ability of financial systems to provide capital. This diversity seems to have maintained itself considering the liberalisation of many financial activities, growing interdependence between financial systems and the prevalence of capital in everyday activities (Lapavitsas & Powell, 2013; van der Zwan, 2014; Kornich & Hicks, 2015). The varied national institutional context reflects the influence of historically path dependent political settlements about the composition and prominence of financial systems, and the distribution of power within it.

To illustrate the differentiated construction of financial systems, scholars of the comparative (political economy of) finance have focused their attention to ideal types for the ordering of finance: the variance between short-termism ‘shareholder’ capitalism versus long-termism ‘stakeholder’ capitalism. Whilst important, this dichotomy has created an idealization of two polar extremes; financial systems are either market or bank-based. This often-qualitative assessment has become the foundation of much comparative institutionalism financial literature and therefore should not be completely ignored. As such, we complement the work of comparative capitalist scholars assessing financial system variance by quantifying the centralisation of financial markets, coupled with the inclusion of further important aspects to the core institutional structures of national financial system. For example, key institutional differences remain in relation to the provision of capital, stock market capitalisation, pension fund assets, competition and concentration of the banking system.

3.8 Theoretical & Empirical Framework

Extending upon the foregoing discussion, this section will attempt to outline how these potential contributions can be executed through a theoretical framework. It will achieve this by conceptualising the institutional configurational approach outlined beforehand stemming from the key empirical leitmotifs of the comparative institutionalism perspective.

3.8.1 Towards an Institutional Diversity Perspective on Entrepreneurship: *An Institutional Configurational Framework*

The configurational approach to national institutions is a way of distilling a complex array of interdependent variables into a unified whole. This is imperative for understanding the institutional environment for entrepreneurship.

Variations in institutional structures and political economies significantly explain the sources and variations of resource and capability endowments enjoyed by entrepreneurs (Yeung, 2002). The divergent forms of capitalism are explained by their unique configurations of the institutional infrastructure as underpinned by institutional complementarity links and historical path dependencies. For example, Hall & Soskice (2001) identify several sets of capitalist clusters, which given their patterns of institutional configurations, give birth to a multitude of diverse political economies. Indeed, this diverse institutional structuring of countries is evident in the substantial variations within institutional sub-spheres. As argued by Amable (2003),

the structure and practices of national level institutions produce distinctive forms of economic organisation. It is argued that the relationship between the institutional architecture of political economies and the entrepreneurial process is hypothesised to depend on the nature of institutional complementarities to which leverage's potential general efficiencies via supporting entrepreneurial endowments.

These significant variations in home country institutional structures can explain variations in the entrepreneurial endowments and resources of prospective entrepreneurs and intrapreneurs (Yeung, 2002). These structures form and enforce conventions, values, norms, practices and rules of the game to shape the logics governing economic decisions and actions, which in turn would influence the allocation of entrepreneurial activity. An entrepreneur must be endowed with at least some resources to be able to act within the competitive marketplace. These are often nationally based in that they are embedded in an institutional context and are structured by pre-existing institutional arrangements. This geographic specificity of entrepreneurial endowments and resources explains why some countries tend to produce more entrepreneurs and entrepreneurial activities (Baumol, 1990; Bowen & De Clercq, 2008). Indeed, the difference in global entrepreneurial rates can be explained by entrepreneur's access to varied entrepreneurial endowments (Yeung, 2002). How then do individual entrepreneurs from the home countries benefit for their entrepreneurial endowments and resources provided by the institutional context? Building on Yeung (2002), entrepreneurial endowments can be divided into several dimensions: (1) information asymmetry; (2) risks and opportunities; (3) finance; (4) human capital and (5) micro interaction.

Information asymmetry is an essential endowment to potential entrepreneurs. If neo-classical economic theory holds, entrepreneurship would not exist as returns to such activities will be less than market based allocation against the backdrop of perfect

information and pure economic rationality. Information asymmetries are a precondition for entrepreneurs to exist and generate profit as entrepreneurs are ‘specialists in taking judgemental decisions in resource allocation’ (Casson, 1982; 1995). If markets were free of informational imperfections, then entrepreneurs would not have an economic incentive to operate. But from an institutionalist perspective, how does such a situation of informational asymmetry exist? Simply, certain institutional structures and configurations tend to increase information asymmetries. Varied institutional formats can increase the degree of bounded rationality, informational ‘impactedness’ and the concentration of information with certain economic agents (Williamson, 1975; 1981). For example, institutions which rely on statist interventions and intensive intra-group transactions tend to increase the level of market imperfection (Yeung, 2002). As institutionalist economists have it, this leads to a bypass of the market in the form of ‘hierarchical’ allocation of resources (Williamson, 1981; Coase, 1937).

However, institutional economics concentrates itself with transaction costs and the alternative governance structures of whom allocates resources; market or hierarchies. It is their analytical focus which seeks to explain the comparative transaction costs under these alternatives to markets, and thus specifies the ownership patterns within society. Rather, we are interested in how informational asymmetries stimulate or constrain entrepreneurial activities. In institutional economics, the entrepreneur is the one responsible for choosing the boundaries of the firm against the backdrop of institutional arrangements. However, as Casson (1982) and Schumpeter (1934) have it, entrepreneurship is less about ownership functions, but rather ‘control and negotiation’.

Specifically, high informational asymmetries tend to encourage economic actors, who have access to information, to be entrepreneurial and exploit the rents available from market imperfections (Yeung, 2002). Whilst new institutional economics implies

that anyone can exploit market asymmetries, we argue that those whom have control of information are the only ones that can sufficiently act. The control of information therefore defines who can be an entrepreneur. The institutional context which provides efficient channels of information dissemination will be the one that provides the most valuable and volume of entrepreneurial endowments. In these institutional configurations, those entrepreneurs endowed with specific information are most likely to engage in entrepreneurial activities; those whom act upon informational asymmetries. This explains why institutional contexts relying on non-market forms of coordination can also exhibit relative equal rates of entrepreneurial activity. It could be theorised that the higher the degree of institutional coherence, the more to which the institutional context corresponds to established modes of institutional complementarity, the higher the rates of entrepreneurial activity.

Therefore, the institutional system that empowers economic agents with such entrepreneurial endowments tend to pose greater 'risks and opportunities' because not every actor is aware of such information. Business risks and opportunities are in turn an entrepreneurial endowment because they directly condition whether social actors become entrepreneurial or not. The endowments of risks and opportunities are born from the institutional context given that the diversity of institutions will imply varying degrees of entrepreneurial risk and opportunity. For example, institutional systems that are characterised by rigid labour markets and semi-governed product markets tend to display lower business risks and opportunities (Yeung, 2002; Henrekson, 2014). Governance within product markets tends to ensure the dominance of large firms whom may enjoy political rents and relative monopsony of specific skills (Amable, 2003; Estevez-Abe et al, 2001). There is therefore little scope for further entrepreneurial activities to penetrate such market saturation and lessening scope for complementary markets to develop. Stable yet strict employment relations and extensive labour

protection increases employee's opportunity cost of changing employers or leaving salaried work to undertake entrepreneurial activities (Henrekson, 2014). On the other hand, countries which are based upon flexible, fluid institutional frameworks and market institutional complementarities may tend to encourage entrepreneurship because of the greater potential payoffs and more scope for genuine innovative enterprise. Whilst this may differ with each case, the institutional structuring of the political economy can ultimately define the degree to which entrepreneurship is a risk based on the available opportunities available for new enterprise.

For entrepreneurship to flourish under these institutional conditions, they need to be complemented by a further set of entrepreneurial endowments. Indeed, the absence of finance and capital will lend little return from other institutional induced entrepreneurial endowments. Without significant financial and capital support, the realisation of returns to entrepreneurial action will be difficult and marginal. For those who have access to information and learnt of their potential returns to brokering risk, will need significant pecuniary support to assume the venture. Certain institutional contexts tend to create greater opportunities for financial support, in relation to the institutional logic of the financial system. The institutional architecture of financial systems is important for three reasons: (1) it provides capital and finance, (2) it attaches conditions to capital allocation and (3) it allocates capital to particular sectors. Whilst most developed capital markets allow for the provision of ample capital, the conditions they attach to capital may have an impact on the actions of entrepreneurs in different ways. For example, market based financial systems tend to allocate capital on a basis of potential short term financial returns, which poses entrepreneurs with fresh short-term risks. Other financial markets, such as 'insider systems', allocate capital differently, usually on a basis of networks which induces more 'patient led capital'.

These all have implications for the endowments available to entrepreneurs, yet in varied ways.

The degree to which entrepreneurs can capitalise upon the institutionally generated endowments is dependent on human capital/skills. How the political economy institutionalises the development of skills and education has important implications for the judgement of entrepreneurs and how/where economic activity is allocated. Human capital is therefore an important entrepreneurial endowment. Whilst some authors claim that the propensity to be entrepreneurial is a natural trait retained by specific and “great” individuals (McClland, 1961), institutionalists argue that skills are attained by entrepreneurs as developed through the institutional framework (Herrmann, 2010; Iversen, 2005; Estevez-Abe et al, 2001). With skills fostered through the institutional setting, human capital becomes a critical determinant of the capabilities of an entrepreneur to capitalise on market imperfections and make credible business judgements.

The acquisition of capital, skills and education within different political economies is related to several institutional structures, specifically within the education and labour markets. For example, the education system can reinforce the potential portability and specificity of skills (Becker, 1964) through allocative spending (Amable, 2003). The institutional structure of the education system can determine where labour will be ‘absorbed’, which defines the relative opportunity cost of self-employment (Estevez-Abe et al, 2001). Active labour market policies (ALMPs) can define the institutionalisation of skills sets which is reinforced by public support for specific sectors and advanced learning. Indeed, the role of education is important in shaping entrepreneurial experience and capabilities. Whilst the institutions structure explicitly defines where the political economy builds its comparative advantages through the institutionalisation of skill

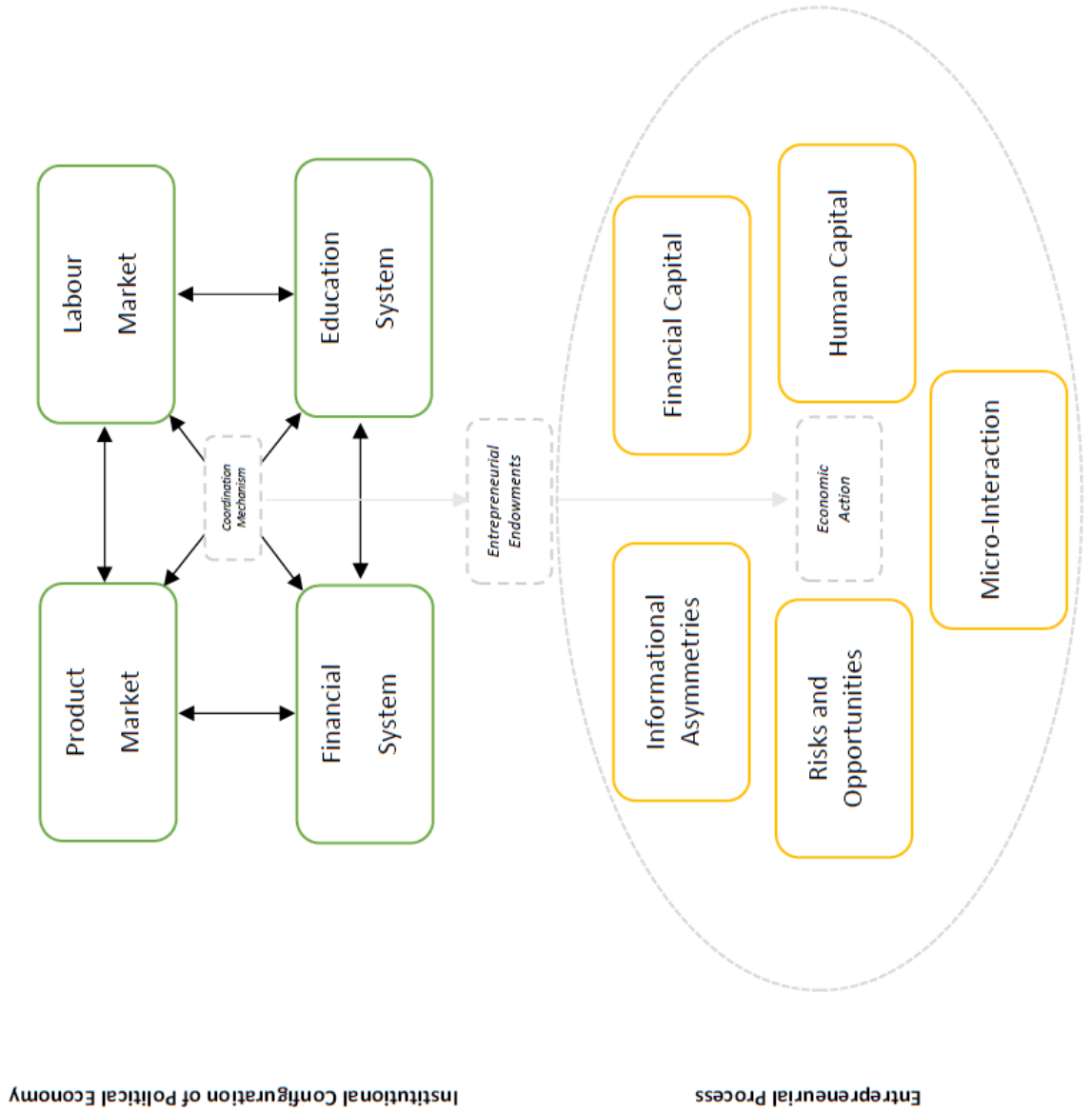
types, the role of education implicitly play an important role in developing certain 'soft skills' applicable to entrepreneurial action. Coupled with real life experience in business, these economic actors will be in a better position to explore, exploit and broker entrepreneurial endowments. The size of this influence will be unique to specific sets of institutional structuring, and therefore the relative action and opportunity cost of entrepreneurs will be contingent on the configuration of institutions.

Entrepreneurs maybe endowed with opportunities and information, but the marginal returns to these endowments is contingent on how the institutional system provides specific forms of finance and human capital. Furthermore, as entrepreneurs become exposed to the 'market process' through the establishment of new venture creation, they will find themselves interacting with other market agents. How they interact with suppliers and customers for example plays an important role in defining the risks and opportunities of venture creation, but also how entrepreneurial outcomes will be shaped. The institutional system determines the mode of agent cooperation and informational coordination between agents. For example, different institutional contexts tend to favour specific forms of relationships, such as cooperative or competitive. Unique forms of relationships have implications for the shape of entrepreneurial action. In coordinated capitalism, which is built upon cooperative relations, firms are not directly exposed to competitive market pressures. Rather, agents build strong cooperative networks within which they are embedded and these network systems rather compete with other network-based conglomerates rather than within (Yeung, 2002; Whitley, 1999). Entrepreneurs who can establish strong relationships with other micro agents is more likely to have success within such institutional context because political economies built upon inter-firm coordination are governed less by price competition but more on quality and trust-worthy networks.

Indeed, institutions that underpin trust in economic relations are essential in the ‘maintenance of the economy and social relations’ (Chang, 2011). Institutions allow for ‘transactional trust’ by minimising the potential of opportunism and cognitive imperfections therefore interacting parties can equally reach Pareto efficiencies (Fogel et al, 2006). It promotes a better flow of information between micro agents, hereby increasing the quality of entrepreneurial endowments. Trust relations can therefore diminish the need for hierarchical equity based ownership, and serves as an alternative coordination system within which entrepreneurs can operate.

As highlighted above, these dimensions of endowments provide an institutional foundation of entrepreneurship to emerge in diverse sets of institutional configuration. Differently, entrepreneurship is an institutionalised process which is defined by the unique generation of endowments available for entrepreneurs to process and capitalise upon. The relationship between the institutional architecture of political economies and the entrepreneurial process is hypothesised to depend on the nature of institutional complementarities to which leverage’s potential general efficiencies via supporting entrepreneurial endowments. The national institutional environment is conceptualised and examined in terms of the characterisation put forward by the work of Amable (2003). This is stylised by Figure 3.1.

Fig. 3.1 Conceptual Map of Institutions - Entrepreneurship Relationship



3.8.2 Institutional Sub-Spheres & Total Entrepreneurial Activity

The relationship between the institutional architecture of the political economies and the entrepreneurial process is hypothesised to depend on the nature of institutional complementarities, to which leverage's potential general efficiencies via supporting entrepreneurial endowments. The impact on total entrepreneurial activity (TEA) is theoretically hypothesised to depend on the nature of economic coordination, which is a function of the nature of institutional complementarities. This said, at the individual institutional levels, it is important to establish a clear-cut link between institutional sub-spheres and TEA, as such, theoretically discussing the influence that the distinct types of institutions have on TEA. Importantly, Amable's (2003) reasoning about how institutions governing the exchange between economic agents translate into different forms of economic activity can be applied to entrepreneurial ventures (Dilli et al, 2018).

As with the *financial system* institutional sub-sphere, the comparative institutionalism literature points out how institutions differ in how they solve the principal agent problem related to the provision of short term, shareholder capital. To be willing to provide funding, shareholders need be assured that their investment is used in the most efficient way (Dilli et al, 2018), which is impacted by both the nature of the labour market institution, educational system and product market institutions.

Major institutional differences exist regarding the extent to which national institutions facilitate access to varied forms of capital. In many Continental European economies (often CMEs), companies are required to take provisions and thus administer huge amounts for future pensions, whereas in most Anglo-Saxon economies (LMEs), individuals need to provide for their pensions. Notably, companies in charge of their

employees' future pensions tend to be more conservative in their investment strategies than individuals. They often choose less risky investment options, hardly investing in venture capital funds. Consequently, the availability of venture capital funds is systematically more limited in CMEs than in the LMEs (Dilli et al, 2018), and therefore one would expect to see institutional variety amongst a measure of institutional capital availability.

Capital availability and the nature of the capital (shareholder versus stakeholder capital) is also a function of the degree of concentration and competition in the banking system, which in turn illustrate the type of the financial system. In particular, liberal based economies tend to embody a high degree of pension funds and stock market activity that underpins the allocation of short term capital. That is, market relations determine issues of firm and corporate control, with capital issues on a basis of profit market returns rather than on a longer term patient capital basis. Taken together, we expect that institutions facilitating the availability of short termism capital stimulate the development of entrepreneurial ventures. Despite this, there is theoretical reasoning to consider that where the financial system provides complementarity logic, then this could positively effect entrepreneurial activity. The tighter the financial system is based around the short termism type or the longer term patient capital coordinated market type, the greater the degree which market imperfections are overcome, representing positively in the degree of market TEA.

Moving to the *labour market*, the comparative institutionalism literature highlights how national labour market institutions address the free-riding problem and contrastingly building agility into the economy. To begin with labour- market institutions regulating permanent employment, rigid institutions (e.g. CMEs), such as centralised wage bargaining, high union density, high protection against dismissal and active labour

market policies tie employees to the same firm for a long period of time. Consequently, both employers and employees are assured that their investment in sophisticated, firm-specific skills will pay off (Hall & Soskice 2001). Employees in rigid labour markets therefore often have in-depth corporate knowledge and long-standing relationships with supplying companies. Such firm-specific skills enable them to autonomously propose and develop improvements that translate into incremental innovations and high-quality products (Hancke & Herrmann, 2007) at the basis of stable yet slow-growth forms of entrepreneurship.

In contrast, the opposite applies to flexible labour-market institutions regulating dependent employment (typical for LMEs), such as wage-bargaining decentralisation, weak union coverage, short notice periods, and a inactive labour market policy. Faced with the possibility of hire-and-fire at short notice, employees acquire general skills that are useful for, and thus adequately rewarded by, all firms needing a certain business function. General skills facilitate radical innovations, and new business ideas as employees are particularly imaginative and flexible in adapting to new corporate environments because of their frequent job changes (Delli et al, 2018). One would therefore expect that flexible labour-market institutions regulating permanent employment will facilitate the development of radically innovative entrepreneurial ventures and elevated TEA levels.

The entrepreneurship literature highlights that entrepreneurial ventures often employ their workforces on a temporary basis in order to remain agile against economic context. Labour market institutions also differ substantially to the degree they allow for temporary employment. While flexible labour-market institutions allow for systematic and repeated temporary work, rigid labour-market institutions require temporary work to be changed into permanent employment under specific circumstances. Rigid

labour-market institutions thus tie employees to the same firm, whereas flexible labour market institutions have the opposite effect. Again, flexible labour-market institutions regulating temporary employment will facilitate the development of entrepreneurial ventures, and is a more conducive environment for general total entrepreneurial activity. Together, low labour market flexibility, high wage bargaining and active labour market policy increase the risk envelope of starting a new venture, lowering the expected pay-off of setting up a new firm in light of being protected and trained in permanent established employment (Kirzner, 1997).

In turn, workforces the acquisition of skill profiles supporting entrepreneurship is not just through labour market institutions, but also through the institution of the *education system*. Institutions governing a country's education system differ in the extent to which they endow the workforce with skills, but it is the composition of the skills which are of importance for entrepreneurship. The comparative institutionalism literature illustrates how rigid labour- market institutions (typical for CMEs) are often complementary to sophisticated national vocational training programmes that train future workforces in firm-specific skills—often in close collaboration with companies needing these skills. The institutions foster high asset specific skill acquisition (Schneider & Paunescu, 2012). Tertiary education programmes, on the other hand, teach general skills that can be used across different companies and industries, hereby low asset specificity (Hall & Soskice, 2001). In line with the comparative institutionalism reasoning, one would expect that countries with less well- developed vocational training systems will lead more workforces to engage in tertiary education and thus, to be better equipped with general skills, facilitating entrepreneurial ventures. But again, one could expect institutions that foster high asset specificity to also foster entrepreneurial activity, but of different composition, such as non-Schumpeterian ventures, given the provision of skills is still apparent. Yet, one could expect education institutions that formally foster

neither general or specific skills would suffer lower levels of entrepreneurial activity, and so educational system institutions matter to the degree they adhere to the logics of institutional complementarities.

In line with the work of Amable (2003), the labour market, education system and financial system are interlinked with the *product markets* of the political economy. The institutions governing a country's product market differ in the extent to which there is regulation and governance across the internal and external markets. As such, the configuration of the varieties of product markets can primarily be based on the according intensity of market competition. The impact of product markets on entrepreneurial activity is dependant on how the institutions complement with the other related sub-spheres of the economy. Low product market regulation and marketised product markets makes ventures more receptive to market changes, with the labour market adapting by flexible changes in labour commitments. This creates more of an interaction via marginal effects of profitability of product markets (Amable, 2013), which promotes clearer strategies of ventures to maintain profit gains.

There is a clear liberal attitude towards new entrepreneurial ventures, and with more of an even-playing-field in terms of competitive behaviours, this can encourage entrepreneurial activity (Dheer, 2017). Alternatively, higher levels of regulation infers lower levels of competitive practice, tending towards imperfect forms of industrial structures which could crowd out new entrepreneurial ventures (Amable, 2003; Urbano & Alvarez, 2014).

3.9 Chapter Summary

The literature for this study was reviewed in two parts. This chapter presented an overview of three streams of literature that deal with the main empirical frame of reference, which is to understand institutions and its application in comparative international entrepreneurship studies. This study adopts a comparative institutional approach given the literature gaps highlighted by the critical review in this section. This approach helps explore a more nuanced line of questioning and argues that this novel perspective is more appropriate in understanding the structure and composition of aggregate entrepreneurial activity. The chapter has also presented an overview of the conceptual framework adopted in this study, with then specific details of the dominant themes of comparative institutionalism, institutional complementarities and functional equivalents. Nonetheless, the discussion of the institutional approach in this chapter has highlighted that institutions matter for economic activity and economic performance. By drawing on the institutional configurational framework building on the work of Amable (2003) outlined above and adopting a quantitative approach, the study aims to explore the influence of national institutional environments on the levels of entrepreneurship. Thus, the main research aim can be elaborated and explored in terms of the following three specific research objectives.

Research Aim:

To explore the influence of national institutional environments on the levels of entrepreneurship.

Research Objective 1:

To ascertain whether capitalist institutional diversity exists, and if so, how can diversities be characterised between political economies.

Research Objective 2:

To ascertain the effects of institutional diversity on aggregate entrepreneurship.

Research Objective 3:

To ascertain whether perspectives from comparative institutionalism can explain the divergent nature of entrepreneurial activity across nations.

These research objectives are used to provide a guiding framework for this research study. The next chapter is concerned with outlining the research approach and methodology adopted in this study.

Chapter 4

Methodology

It is necessary to exploit the gaps of the relevant literature outlined in the previous chapters with a pertinent methodology to address the research questions posed below. This chapter aims to discuss the research approach of this study and outline the two-pronged research design utilised to achieve the core research aims and objectives. In this respect, the chapter begins by outlining the intended research questions within the context of the recently acknowledged literature voids. From this perspective, it is acknowledged that methodological approaches are based on a philosophical foundation, hereby presenting a discussion on epistemological and ontological perspectives of the study. The study of the diversity of entrepreneurial activity from an institutional diversity perspective undertaken here is rooted in the positivist paradigm and correspondingly it employs a two-step quantitative approach to answer the research questions rigorously. The research design for this study is specified by two sequential steps. The first step comprises of a principal components analysis with the attempt to develop robust quantitative variables which proxy for a countries institutional context.

A cluster analysis of these variables is further employed to provide a descriptive context of institutional diversity and specify robust institutional differences. This objective contextual taxonomy of institutions and countries helps give legitimacy to such diversity approach. The variables here are then utilised in specified ways for the second step, which employs a multivariate panel model. The overall aim of this step is to test various model specifications outlining potential statistical relationships and directions between institutional diversities and aggregate level of entrepreneurship nationally. The sample here is specified by 30 OECD countries, with a time dimension of 6 years.

The chapter is structured as follows: Section 4.1 outlines the research questions pursued in this thesis; Section 4.2 explains the research approach, leading onto Section 4.3 which explains the research paradigm this study is set within; Section 4.4 specifies the research design which is split into Section 4.4.1, the specification of the factor analysis of step one, and Section 4.4.2, the panel analysis and its pertaining model specification, hypotheses, data structure and threshold statements.

4.1 Research Questions

From the literature review presented in the previous chapters a number of theoretical and empirical ‘gaps’. Institutional theory is multidisciplinary and plural, yet entrepreneurship studies have largely overlooked some strands of institutional theory in favour of another. As explained in the previous chapters, entrepreneurship studies tend to devote their attention to ‘*convergence*’ perspectives of institutions rather than an institutional ‘diversity’ lens which can underscore and highlight the multitude of varied configurations of political economies. Present comparative international

entrepreneurship studies overlook the combination of institutions together, which per some scholars overlooks the ‘institutional complementarities’ present in industrialised political economies. These literature gaps lead to the main research questions:

Research Question 1:

Does capitalist institutional diversity exist and if so, how can diversities be characterised between political economies?

Research Question 2:

What are the effects of institutional diversity on aggregate entrepreneurship?

Research Question 3:

Can perspectives from comparative institutionalism explain the divergent nature of entrepreneurial activity between nations?

What follows explains how the answers to these questions were pursued, looking at the methodology and research philosophy employed in this thesis.

4.2 Research Approach

Research approach is the process which social science theories are generated, evaluated and justified (Gill & Johnson, 2010). The research approach is concerned with the

general orientation of the relationship between theory and research (Saunders et al, 2009). There are two major approaches to research: induction (for theory building) and deduction (for theory testing). Inductive research develops theory from initial data, via describing and analysing data to determine if there are patterns emerging as a basis for explaining what is observed. Unlike inductive research, the deductive approach reverses the research process sequence. Deductive research works from theory to the specific observations. It starts with existing theory, which through data analysis refutes or confirms a set of hypotheses. These two approaches are not mutually exclusive but rather in many cases, they can complement each other (Peirce, 1903).

Broadly, methodological issues have always a point of contest in social science research, none more so than in the specific field of entrepreneurship (Busenitz et al, 2003). Given the heterogeneous complex nature of entrepreneurship phenomenon (Coviello et al, 2011; McDougall & Oviatt, 2000), there is no single approach that could be easily adopted for all entrepreneurship research. However, selected methods should be compatible with the aims of the study whilst reflecting the relationship between theory and research.

This thesis adopts a quantitative, deductive approach to explore the influence of institutions on aggregate entrepreneurship performance in OECD based countries. It is therefore concerned with testing objective hypotheses by examining the relationship among variables. This study takes forward the claim that understanding aggregate entrepreneurship, embedded within specific institutional contexts, can best be explained by advancing the relationships among variables posed using questions and hypotheses (Davidsson, 2004).

The rationale for this approach is that the quantitative data and their subsequent analysis provide a general understanding of the research problems. Given this study has identified literature gaps in the underutilisation of certain institutional approaches, it is felt that using a quantitative approach and the subsequent results opens the domain to a potential multitude of methods. Quantitative approaches are largely exploratory in this regard. The research agenda takes a different institutional approach to the current entrepreneurship literature, and quantitative methods allows the study to test fresh theoretical arguments within a set of established rules.

Whilst it is seen that qualitative approaches provide depth and detail, quantitative methods can statistically measure and evaluate a ‘great number of people’ (Patton, 2002). Qualitative studies can yet reach the same breath due to a reduced number of cases, and therefore quantitative methods is more fitting for understanding the allocation of economic activity across a large breadth of countries. At a more general level, deductive research allows the study to use formal logic to deduce conclusions from given premises (Bryman & Bell, 2011). It allows researchers to conclude whether their theories are valid or not, and is therefore useful for understanding aggregate patterns of economic activity within countries.

4.3 Philosophical Foundations

As Jennings et al describes, “Either explicitly or implicitly, researchers base their work on a series of philosophical assumptions regarding ontology, epistemology, and human nature, which have methodological consequences” (2005, pg. 145). Research methods are therefore based upon a deeper philosophical foundation. Given there is

Table 4.1 Central Features of Subjective & Objective Research

	Subjectivist Approach	Objective Approach
Ontology	Social world is an artificial creation	Social world is external to the individual
Epistemology	Based on the perspective of the individual(s)	Based on the approach of natural science
Human Nature	Free will	External environment determines action
Methodology	Based on gaining primary, first hand knowledge	Based on a systematic approach that generates and tests hypotheses

no one method of undertaking research, but a series of methods, the philosophical underpinning regarding both the nature of society and the approach of undertaking the research will be varied and distinct. The point is echoed by Burrell and Morgan (1979) who argue that the key debates in social science centre on two dimensions; the first regarding the nature of social science and the second regarding the nature of society. The first debate centres around whether an objective or subjective approach yields a better understanding of the real world. In particular, is is concerned with whether society exists as a real object, which is external to the individual. In contrast, a subjectivist approach sees society as a human construct which is an artificial creation internal to the perspective of said individual. Adapted from Burrell and Morgan (1979), Table 4.1 outlines the central features of these two positions with respect to their ontological, epistemological, human nature and methodologies.

The second dimension is largely concerned with the sociological view of subjects under investigation. Here, there is a 'loose' continuum between examining phenomenon in terms of an 'ordered society tending to equilibrium' (Bowring, 2016) or a view characterised by change and conflict. According to Burrell and Morgan (1979), the former 'regulation school' views are characterised by functional coordination, stability

and integration, with the main foundations developed from Emile Durkheim (1893) and Herbert Spencer (1873). According to functionalism, society is a system of interconnected parts that work together in harmony to maintain a state of balance and social equilibrium for the whole. The second contrasting school sees society as marked by conflict, coercion and thus disintegration, with much match to the seminal works of Karl Marx.

Stemming from this, Burrell and Morgan (1979) lead to the central claim that organisation studies can be captured in four paradigms based on the configurations of the above axis, as outlined by Table 4.2.

Table 4.2 The Four Paradigms of Social Science Research

	The Sociology of Radical Change		
Subjective	<i>'Radical humanist'</i>	<i>'Radical structuralist'</i>	Objective
	<i>'Interpretive'</i>	<i>'Functionalist'</i>	
	The Sociology of Regulation		

Despite the criticisms directed by scholars such as Deetz (1996) and Scherer & Steinmann (1999), these four paradigms are still the accepted categorisation of the multiplicities involved in social science research (Grant & Perren, 2002). As such, it is appropriate to further outline these four paradigms in order to evaluate the philosophical and methodological underpinnings of this research. The four mutually exclusive paradigms of social science research, outlined in Table 4.2, are summarised in Table 4.3.

Given that the research design of this thesis is embedded deep within a series of philosophical assumptions, it is beneficial to understand the philosophical underpinnings

Table 4.3 Paradigms in Social Science Research

Paradigm	Philosophical Basis
Interpretive	Basis in subjective thought with society viewed through an interpretative lens. Therefore there is no one single reality. Therefore each human has free will and is independent from external factors. Theorists within this paradigm seek to explore the basis of social reality and how actors interpret this. Thus, methodologies are neither positivist given no generalisations are made, hereby relying on a 'ideographic' approach to research.
Radical Humanist	This paradigm has its basis in subjective thought but focuses on changing the status quo of society. External ideologies are said to influence an individuals interpretation of society. This approach therefore focuses on how these influences can be controlled in order to allow change. As the paradigm has a subjective basis the methodologies employed are non-positivist and research methods are 'ideographic', focussing on obtaining first hand experiences from actors.
Radical Structuralist	This paradigm is symbolised by the belief that society is characterised by conflict between its members. This conflict manifests itself in terms of crises which alter societal relations. There is therefore no permanent status quo but a number of episodic epochs as society evolves. However, society is viewed in Functionalist regulationist terms with society being viewed as observable activity. Due to the objective viewpoint, methodologies are positivist and research methods are nomothetic.
Functionalist	This paradigm has its basis in the sociology of regulation in that society is viewed as being ordered and the structure of society is based on maintaining a stable equilibrium. Society itself is viewed as an objective reality in that social structures are observable factors applicable to all rather than being a result of individual interpretation. The Functionalist paradigm is positivist in methodology and nomethetic in terms of research method in that it seeks to measure and explain social structures in order to produce generalisable findings.

and discuss the merits of the various approaches taken to solve the research questions posed by this thesis.

The first point to be made is that empirical research and application of institutional theory within the thesis context are distinctly regulationist in the sense that they are characterised by both consensus and cooperation. The general concept of ‘institutions’ is defined by their structuralist power, where they enable and constrain, independent to the individual. By definition, institutions determine the action of individuals, mirroring Burrell and Morgan’s (1979) concept of objectivity and social regulation. A large body of institutional theory is borrowed from the earlier works of regulationist scholars (Boyer, 1987).

It is also clear from the literature reviewed that the approach is mainly functionalist as institutions are seen as observable entities and measurable objective facts, largely through the use of statistical proxies and manifest variables. Given the growing body of secondary data available for entrepreneurship rates of said country means that international entrepreneurship is also seen as an objective phenomenon worthy of measurement.

Utilising a functionalist approach and a positivist methodology allows this research to be comparable to the ‘institutional turn’ in explaining economic action. This helps add greater contributions in terms of the body of knowledge. This thesis is firmly rooted in the positivist realm as it is based on deductive methods of investigation. Thus relevant theories are examined, hypotheses are generated based on these, with empirical work examining these relationships (Bryman & Bell, 2011). The conclusions then evaluate the findings in terms of the theory to assess whether the hypotheses can be considered valid or not and the implications for the body of theory because of this.

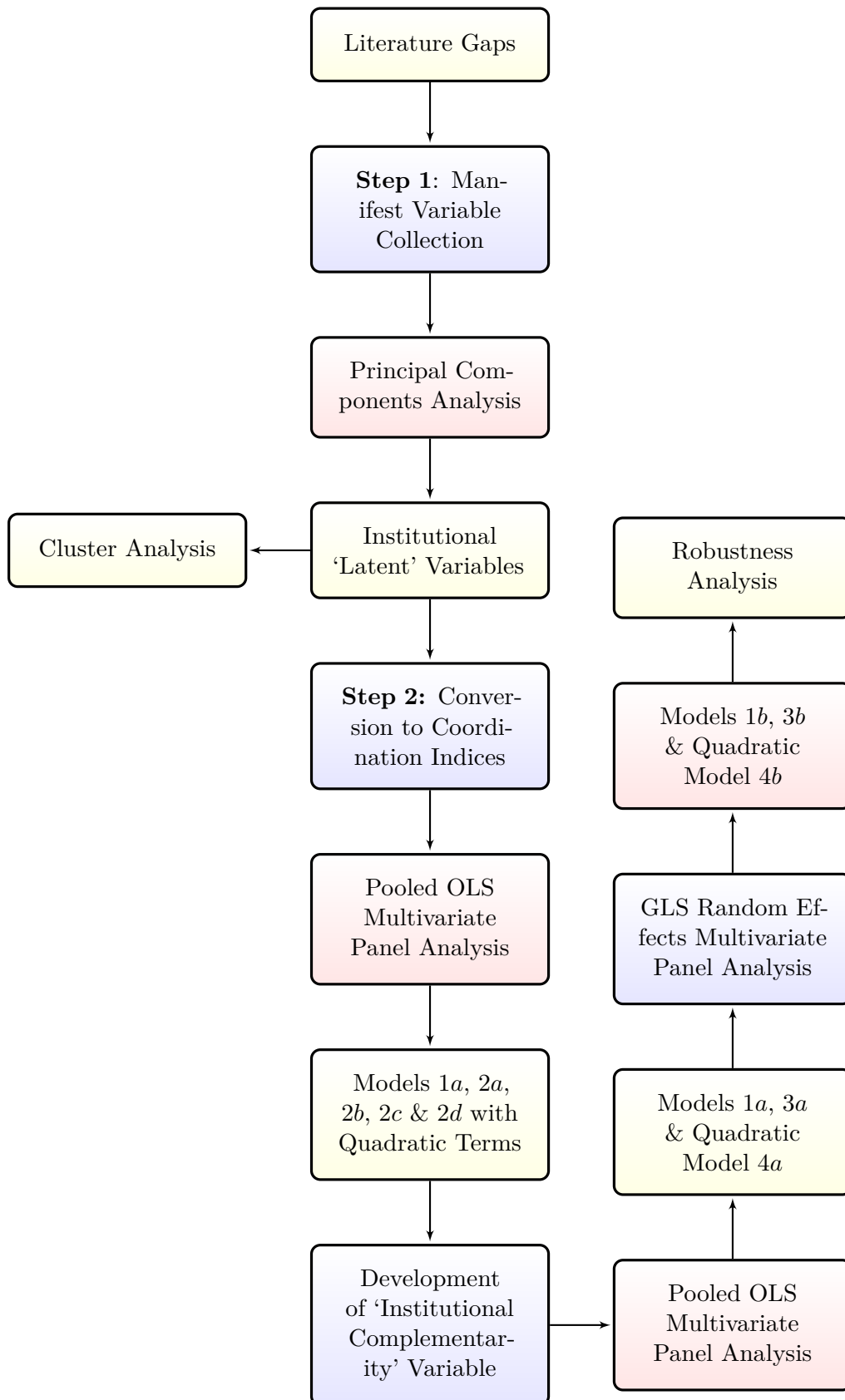
4.4 Research Design

This study utilises a quantitative approach with two sequential sections. The results of the first quantitative section are used to underpin the second quantitative section. Specifically, the variables created in the first section are those which specify the econometric models of the second section. The research design is conceptualised by Figure 4.1.

The first quantitative ‘step’ comprises of a principal components analysis and then a discriminant variable analysis in the form of a hierarchical ascending cluster analysis. The purpose of this factor analysis technique is to develop robust quantitative variables which proxy for the institutional environment within countries. The data used within the principal components analysis comprises of 42 manifest variables collected from numerous online secondary data sources. This data is enriched with databases that contain certain information on labour market structure, financial system depth and education spending on a relative large set of countries. Consequently, to maintain consistency, validity and scope from such a multiple source approach, the analysis is performed on 30 countries which are all members of the OECD using data collected from 2010 to 2015. Cluster analysis is then performed on these developed variables. This outlines the similarities and dissimilarities between countries, which clusters countries into groups; it is a contextual tool. This descriptively classifies the institutional diversity between countries and talks directly to the comparative institutionalism literature. The method used in this thesis is different from the usual ideal-typical methods of comparative capitalism (i.e. Hall & Soskice, 2001).

This study starts from the consideration of Amable’s (2003) four fundamental institutional sub-spheres: product-market competition; the wage–labour nexus and

Fig. 4.1 Methodological Approach



labour-market institutions; the financial intermediation sector; and the education sector. Different complementarities between institutions are envisaged, based on the theoretical work on this topic accomplished over the last several years. Then, on the basis of both the results and the previous characterizations of capitalism found in the literature, this study posits the existence of varied types of capitalism, each characterized by specific institutional forms and particular institutional complementarities. The aim is to identify institutional dimensions and clusters of countries with common characteristics as well as obtaining a representation of the main dimension(s) that contribute to differentiating countries within a given institutional area, akin to the first research objective. These dimensions can then be carried forth for model specifications pertaining to the effect of institutional diversity on economic outcomes.

The second subsequent step uses a multivariate panel analysis. Using the institutional factors created in the first section, this step/section tests several econometric model specifications outlining the statistical relationships between institutions, their collective diversity and the levels of international entrepreneurship within the country sample. Departing from the narrow definition of institutions, the factor and cluster analysis underlines the diversity of political economies which are built upon unique configurations of institutions. In the second section, these factors are used to create coordination indices for each institutional sub-sphere, which highlights the degree of non-market coordination present within institutional sub-spheres. To account for institutional complementarities, this section creates an institutional complementarity term which measures the institutional form of each country. These measures then form the data specification of the panel models. Amongst a backdrop of control variables, the aim is to test the relationship between institutional diversity, their aggregate compositions and aggregate entrepreneurship performance. Specifically, this section uses time varied dependant and control variables between 2010 and 2015. The number

of observations are therefore 145¹. This section then employs a range of robustness analysis to test the reliability of the empirical findings.

The use of this approach is dictated by the complexity of the investigated process which has certain specification difficulties. Firstly, there is a lack of secondary data which can be used to ‘measure’ institutions. Data is often confined to a narrow set of countries, with data coverage often weak. As such, it was important that this study attempts to measure the deeper concept of institutions. This is aimed at being an empirical contribution itself. Secondly, the literature review highlighted the lack of ‘Governance approaches’ to both comparative capitalism and international entrepreneurship. Institutional data in these areas were not available, to which oriented the study towards using factor analysis in an attempt to measure institutions within the data set. Thirdly, this study uses cluster analysis to underpin where the contextual diversity between political economies lie. This enables the study to test the institutional complementarities hypotheses developed within the comparative institutionalism literature. Overall, the design of this methodological enquiry is aimed at contributing to scholarship in both comparative institutionalism and comparative international entrepreneurship by situating this study within the literature voids identified beforehand.

¹Given the inclusion of a distributed lag model for purposes of endogeneity, the specification loses one year, hereby 29 observations over 5 years. The country sample was reduced from 30 to 29 for this step given the removal of GEM data on New Zealand.

4.4.1 Step 1: Institutional Capitalist Diversity

4.4.1.1 Factor Analysis: *Principal Components Analysis*

Factor analysis in the form of principal components analysis (PCA) operates on the notion that measurable variables, in the form of manifest variables, are reduced to fewer latent variables that share a common linear variance. The reduction in dimensionality of observable variables allows researchers to account for concepts and variables that are not directly observable but are hypothetical constructs that are used to represent variables (Cattell, 1973). As a multivariate statistical method, PCA aims to produce linear combinations of original variables. This is achieved by extracting variables that correlate highly with a group of other variables but do not correlate with variables outside the group. Its main objective is the reduction of a larger set of ‘manifest’ variables into a smaller number of ‘latent’ variables namely ‘components’, to impact the size of the original matrix and to locate a set of synthetic dimensions for the interests of interpretability. Overall, PCA has two key uses. Firstly, it allows researchers to understand the underlying structure of a set of variables. Which means secondly, large datasets can be reduced by observing ‘groupings’ of variables which assembles common variables into a descriptive category (factor). As such, PCA is useful for studies that involve an extensive use of variables, items from questionnaires or involve the measurement of unobservable concepts (e.g. happiness, anxiety). Therefore, it is easier to focus on smaller sets of key factors, rather than considering too many variables that may be trivial. PCA is therefore useful for placing variables into meaningful and measurable categories.

Mathematically, principal components analysis (PCA) is primarily concerned with describing both the variation and variation shared by each unit of each variable. This

is referred to as common variance, in contrast to specific variance. Specific variance describes the variances which is unique to a variable for which is not shared with any other variable. Any variance not accounted for by common and unique variance is due to error variance. Total variance is therefore the sum of these three types of variance within variables. The extraction of the sum of specific and common variance (combined to make 'unique variance) is the aim of PCA (Bryman & Cramer, 1990). PCA aims to extract the component that accounts for the largest degree of unique variance amongst variables. These variables are therefore linear functions of the component which account for the largest set of variance.

The linear functionality under factor analysis can be represented by a simple mathematical model (as follows). Firstly, data is mean centered on each variable given a data matrix with n samples and p variables. This ensures that variables do not affect the spatial relationships of the variables nor the variance along the data matrix. The first principal component, represented by Y_1 is given by the linear relationships along manifest variables X_1, X_2, \dots, X_p along the notation of the following terms:

$$Y_1 = \alpha_{11}X_1 + \alpha_{12}X_2 + \dots + \alpha_{1p}X_p$$

Specified by the following matrix notation:

$$Y_1 = \alpha_1^T X$$

Where α denotes the factor loading coefficient of interest, of X_p variable. As such, Y_1 is accounted for by the greatest possible variance of the data matrix. However, variance is bound by constraining the sum of squares of α_{1p} to 1:

$$\alpha_{11}^2 + \alpha_{12}^2 + \cdots + \alpha_{1p}^2 = 1$$

The same process of maximising linearity is followed through to the second principal component Y_2 . However, unlike the first principal component, Y_2 must be perpendicular and uncorrelated with Y_1 accounting for the next highest ‘unique’ variance as such that:

$$Y_2 = \alpha_{21}X_1 + \alpha_{22}X_2 + \cdots + \alpha_{2p}X_p$$

The process of extracting variance continues until p number of Y_p is equal to the number of p . This results in a situation where all transformations of the manifest variables are equal to the principal components:

$$Y = AX$$

Overall, these models postulate that observable manifest variables (X_p) are underpinned by common factors. Measuring the dimensionality provided by each variable means estimating the factor loadings (α_p) of X_p . There are several ways of estimating the parameters of interest, of which we highlight two key methods, ‘Maximum Likelihood’ and ‘Principal Components Analysis’. By investigating the correlation matrix, Maximum Likelihood attempts to analyse the maximum likelihood of sampling by estimating the factor loadings for a population (Yong & Pearce, 2013). Factors are therefore extracted until there is enough variance accounted for in the correlation matrix. Principal components analysis however extracts the maximum linear variance, which reduces a large set of variables into smaller ‘interpretable’ components (Costello & Osborne, 2005).

The key issue with PCA is that components are often, in their raw form, hard to interpret. This is due to the data structure not loading perfectly on the Y and X-axis at a 90-degree angle. Therefore, as argued by Tabachnick & Fidell (2007), any component should be further ‘rotated’ to increase interpretability. The aim of rotation is to attain an optimal simple structure which is underpinned by the loading of variables on the minimum number of components possible (DeCoster, 1998). By rotating, components are defined by a distinct cluster of linearly interrelated variables and minimised cross-loadings, which makes interpretation easier (Rummel, 1970).

There are two types of rotation methods, namely orthogonal and oblique rotation. Orthogonal rotation involves rotating both components at a 90-degree angle from each other. This rotates each component axis to match the variable structure to maximise the interrelatedness of each variable. The two main orthogonal rotation techniques are Varimax and Quartimax rotation. Varimax rotation minimises the number of manifest variables that load highly on a factor, whilst condensing small loadings into obsolete loadings. Quartimax rotation works by minimising the number of factors needed to explain specific interrelated clusters of variables (Tabachnick & Fidell, 2007).

Unlike orthogonal rotation, oblique rotation work through changing the angle between axes. In turn, oblique rotation produces a pattern matrix which comprises of variable loadings and a correlation matrix that includes the correlations between factors. Here, factors are correlated. This is undertaken by two main techniques, Promax and Direct Oblimin. Promax rotation maximises factor correlations by multiplying factor loadings by the power of four. Direct Oblimin aims to maximise the eigenvalues of each factor by diminishing the interpretability of the factor loadings.

To facilitate the design of institutional data, the first step of data analysis will be to perform factor analysis, namely principal components analysis (PCA). Given the perceived difficulty in measuring (latent) institutions (Voigt, 2013) coupled with the desire to measure ‘input’ versus ‘output’ variables, the use of PCA will allow the measurement of the underlying structures of institutional dimensions with the creation of synthetic indicators. The objective is to obtain a representation of institutional variables to assess countries along the spectrum of a given institutional dimension. Country projections along the factorial planes will produce a more objective assessment of diversity between countries, providing initial data for the subsequent steps of data analysis; cluster analysis and panel modelling. One advantage of factor analysis is that it broadens the scope of data by overcoming missing data, allowing the inclusion of countries that would otherwise be ignored if the data coverage were initially weak (Witt & Redding, 2013). Furthermore, single indicators provide a one-dimensional perspective, whereas the inclusion of numerous indicators within a factor provides added dimensionality. This is imperative when undertaking comparative analysis (Voigt, 2013).

Additionally, this study further employs an orthogonal Varimax rotation technique. The reason for this is two-fold. Firstly, Varimax rotation minimises the number of manifest variables which load highly on a factor, and thus has been argued to increase the reliability of individual components (Abdi & Williams, 2010; Simon-Moya et al, 2014). Secondly, it is in line with extant studies published within the literature (e.g. Busenitz, Gomez & Spencer, 2000; Stenholm, Acs & Wuebker, 2013).

This analysis extracts factors with eigenvalues greater than unity (1) in line with extant studies and the recommendations of Amable (2003) and Hall & Gingerich (2009). Confirmation that the data are correlated is evaluated using Bartlett’s test

for sphericity, adopting a significance level of 1 per cent. Goodness of fit is evaluated using commonalities and total variance explained. As argued by Hair et al (2010), the desired threshold for sufficient factor loadings depends on the relevant sample size of the data set. As such, this study takes the absolute value of 0.60 as the threshold for a sufficient factor loading (Costello & Osborne, 2005). However, where found, variable loadings below this value can be used for illustrative purposes as chiefly adopted by Amable (2003).

An additional statistical measure for determining the adequacy of factor loadings can be through the examination of the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and, as highlighted, through the Bartlett's Test of Sphericity. These two additional tests aid decision-making on the appropriate use of PCA to generate factors. The KMO index ranges from 0 to 1, with $n > 0.50$ being considered as a suitable threshold. Kaiser-Meyer-Olkin (KMO) allows researchers to ensure that their data has sufficient correlation to justify the applications for factor analysis (Hair et al, 2010). For this study, the techniques were used to test whether or not factor analysis can be a suitable option. According to Kinnear and Gray (2004), KMO measures of more than 0.5 should be considered appropriate to proceed with factor analysis, while measurements above 0.80 are regarded as meritorious and those below 0.50 as unacceptable. Factors not meeting this 0.50 threshold were not retained and are not reported in the findings section.

4.4.1.2 Sample & Data Structure

Methodologically, institutions are difficult to quantify and measure (Voigt, 2013). Indeed, there is no clear-cut definition of the institutional sub-spheres make-up. Studies

therefore can often leave a methodological void between the ‘concept’ of institutions and their empirical structure. Put differently, there can be issues of construct validity. Given institutions are latent constructs, this study makes use of principal components analysis (PCA) in an attempt to quantify institutional dimensions within each sub-sphere. However, it then becomes an issue behind ‘which’ variables to select in a bid to structure said institutions. Authors have the choice behind which (manifest) variables to select for data treatment, but do not have a direct choice behind any principal components created, given these are outcome variables of the PCA process. Therefore, this study selects variables similar to those in leading comparative institutionalism work (e.g. Amable, 2003; Schneider & Paunescu, 2012). They are similar in the sense that the variables are used in an attempt to cover certain dimensions of said sub-spheres, but not always exact variables, as data coverage and scope can preclude this.

Ideally, data would have been collected for all economies covered by main organisations such as the World Bank and World Economic Forum. However, this would not be feasible for three reasons. Firstly, given the research intentions to understand the link between entrepreneurship and institutions, independent variable coverage is confined to the data availability of dependant entrepreneurship data. As will be introduced, data for entrepreneurship is taken from the Global Entrepreneurship Monitor (GEM). Whilst this database is the key source of global entrepreneurship data, it does not cover all the 184 economies of the World Bank. Institutional data was therefore initially collected for those countries covered by GEM data. Secondly, this study takes data from numerous databases, of which differ in country and longitudinal reporting. The balance had to be struck between the countries which were chosen and the extensiveness of variable reach (by using various databases). Thirdly, this study confines the country sample to just OECD countries. The reason for this is because there is a need to create a harmonised comparison of countries at an approximate equal level of development.

This also equates better with the core comparative institutional literature and these countries tend to have more reliable validated data. Therefore OECD countries and variable extensiveness become the key frame of reference for the sample.

The final sample includes 30 countries, all of which are OECD members². Overall, the OECD coverage is 86%, given the study was unable to collect extensive data for Iceland, Israel, Latvia, Turkey and Greece (Lithuania gained OECD membership after the study was conducted)³. However, the study is the first to include a wider basket of countries with the extensive level of original data. As Witt & Redding (2013) argue, it remains difficult to maintain the scope of countries when conducting quantitative based comparative institutionalism research.

4.4.1.3 Manifest Variables

Figures B.1, B.2, B.3 & B.4 give an overview of the 42 manifest (original) institutional variables which form the structure of the factor analysis. Variables reflect key dimensions of institutional analysis and raw variables employed in several major studies as discussed beforehand. More data was collected, yet given they played little use in forming interpretable components, they were dropped and are not included in the respective figures. The variables are therefore those that underpin the retained institutional factors. Where available, data was averaged over the last six years to smooth any outliers (2010-2015) and were subject to robustness checks in chapter 6. 6-year averaged

²Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Japan, South Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States (Specification of countries with ISO codes are given in Appendix B)

³Greece is a noticeable omission. This was due to a lack of reliable data on its labour market spending

data is a common trend in comparative political economy based quantitative research (e.g. Hall & Gingerich, 2009; Kenworthy, 2006; Avadagic & Salardi, 2013).

4.4.1.4 Cluster Analysis

Cluster analysis of these variables is then employed to provide a descriptive contextual taxonomy of institutional diversity and specify robust institutional differences. Cluster analysis is a method of applied statistics that attempts to identify groups in data such that observations within groups are as similar as possible yet differences between groups are maximised. The greater the homogeneity within a group and the greater the difference between groups, the more distinct the categorisation of data is. Cluster analysis therefore has two objectives. Firstly, it aims to identify cluster structures and underlying patterns in a set of observations. Secondly, it assigns observations to clusters in some optimal manner. This is based on establishing the minimal intra-cluster inertia and the maximum inter-cluster variance. The principle of optimal characterisation involves considering the distance between the average of one variable in a cluster and its general cluster. The greater the significance of the distance, the more optimal the cluster classification. Clustering in comparative institutionalism subsequently allows researchers to generate country typologies as drawn from statistical differences and similarities. This offers this study a vehicle to move beyond mapping diversity chiefly upon theoretical arguments. As argued by Ronen and Shenkar (2013, p.869), clustering is "more than a methodological device; it is a vital tool for theory development...setting a foundation for sense-making, reasoning and conceptualisation". It therefore operates in such a way as to provide illustrative context to institutional diversity and facilitates discussions on the spectrum of institutional variance. These modes of capitalism constitute an important benchmark for understanding the effect of

institutions on entrepreneurship. Identifying and appreciating the impact of institutions on entrepreneurship requires a better understanding within the varieties of capitalism and the forms of institutional complementarities within which define them.

Overall there are two approaches to cluster analysis, partitioning and hierarchical methods. Partitioning methods requires researchers to specify the number of clusters a priori. Specifying the number of clusters means that observations are moved between clusters until an optimal reorganisation of variables are met. In hierarchical cluster analysis, the number of groups is unknown, meaning maximal inter-cluster variance can be established. As such, it uses statistical procedures based on various partition observations and distance metrics to establish the optimal level of group variance. Given hierarchical cluster analysis is most common form of discrimination application (Ahlquist & Breunig, 2009), this section takes time to consider the intricacies of each technique.

Hierarchical cluster analysis takes two forms: the agglomerative and the divisive approach. By regarding each observation on its own, the agglomerative approach starts with many clusters and proceeds to merge each cluster until there is maximum within-cluster similarity and between-cluster variance. By using a predetermined distance interval metric, many clusters are further combined into larger clusters until all observations are in one cluster. Conversely, the divisive approach proceeds in the opposite direction, where all observations are in one large group, then processed through subdivision into smaller cluster groups.

Specifically, this study takes the interval mode of Squared Euclidean distance; dissimilarity is defined as the Euclidean metric between N cases. This study further

select the 'Ward's Method', a step-by-step aggregation of countries by cluster as so the intra-cluster inertia has minimal variance.

In a bid to determine the optimal number of clusters, this study used a clustering validation technique via the Elbow Method (Zhao, 2012). Given this study statistically defines a cluster such that the total intra-cluster variation is minimised, the Elbow method looks at the total within-cluster sum of squares as a function of the number of clusters, as such that the marginal impact of an extra added cluster becomes zero or negative (i.e. it bends like an elbow), hence optimum number of clusters given. The Elbow method yields an optimum number of clusters which the study takes forward.

4.4.2 Step 2: Multivariate Panel Analysis

4.4.2.1 Rationale for Panel Analysis

This study estimates the effects of institutions on aggregate entrepreneurship rates by undertaking two varied econometric approaches to panel data analysis. The aim is to estimate the relationship between institutional diversity, amongst a backdrop of macro-based control variables, and entrepreneurship from different countries over yearly periods of time. This can be handled using methods developed in the context of panel data models (Greene, 2003). The rationale for using panel analysis over other forms of econometric treatment is three-fold.

Firstly, one advantage of panel data methods is that it allows this study to multiply observations. Where the time period (t) is fixed in cross sectional data structures, panel data multiplies the number of observations (n) by the time series component (t)

and therefore implies greater variance in explanatory variables. This in turn provides greater validity within the estimation of key parameters. Secondly, the use of a panel data approach, rather than a pure cross sectional or time series analysis is justified by the possibility of controlling for potential individual and temporal heterogeneity of the data.

Thirdly, a panel data approach allows the identification of effects that are not directly observable in other data structures. Given the potential endogeneity of variables, panel data allow distributed lag models that overcome what would otherwise be wide-ranging assumptions of exogeneity in cross sectional data. Overall, panel data econometric treatments provide a more robust set of hypothesis estimators.

4.4.2.2 Hypotheses

Despite wide acknowledgement of the importance of the institutional environment for entrepreneurship, the dominant empirical approach is to test the impact of different types of institutions on entrepreneurship against one another as to identify the most relevant institutional form (Estrin et al, 2013). Providing important merits nonetheless, this empirical approach allows policy-makers a clear set of which institution matters most, and therefore where reform should take place. As discussed in Chapter 3, a more complete view of the institutional structure of a country is needed to fully appreciate how the institutional setting impacts upon entrepreneurship. Taking forward a comparative institutionalism based approach to institutions supports this agenda. Institutional diversity built upon coherent forms of institutional complementarities hold an important framework for appreciating the institutional setting, providing natural context for the study of entrepreneurship. The concept of institutional complementarity is helpful for

understanding the internal logic of institutional configurations. It challenges the focus on effects of single institutions, and redirects the attention to the functional effects of configurations.

Literature suggests that diversity is defined by the lack of convergence around a specific form of institutional configuration and theorized notion of complementarity. Analogous to the themes of the comparative institutionalism literature, it is claimed that there is not only divergence among institutional practices in different sub-spheres of the political economy, but that some of these practices can be theoretically complementary to others. Institutions are said to be complementary when each raises the returns available from the other (Aoki, 1994; Boyer, 2005). Aggregate rates of economic activity are theorized to depend on the efficiency of the entire institutional infrastructure (Hall & Soskice, 2001; Amable, 2003), therefore specific sets of institutions which generate overall efficiencies will have a contribution towards the entrepreneurial action of individuals (Ebner, 2005; 2010).

If the institutional context matters then the efficiencies available to entrepreneurs should be higher in settings where institutional sub-spheres are dominated by coherent forms of market or egalitarian coordination and these efficiencies should show up in improved aggregate levels of entrepreneurial activity (Ebner, 2010). As suggested by Hall & Soskice (2001), specific forms of institutional configuration have distributive effects that increase the returns to economic actors, and therefore returns to entrepreneurs should be reflected in the aggregate levels of entrepreneurial activity. These implication yields the following set of hypotheses which account for varied institutional perspectives:

Institutional Convergence to Explain Entrepreneurship

Present forms of institutional enquiry into explaining the spatial variation have often taken forward institutional theory that portrays convergence, that is, there is one best mode of arranging the institutional infrastructure to allow entrepreneurial performance (Estrin et al, 2013; Ebner, 2010). This ‘one-best-model’ is often seen as a process of institutional change in the format of liberalization; the more liberal the institution(s), the more/better the measure of entrepreneurship (e.g. Spencer & Gomez, 2004; Dau & Cuervo-Cazurra, 2014). This proposition is further enhanced by observing the complementarities between institutions and not just the singular effects of institutions. This study assesses this theoretical base within the following hypotheses:

Hypothesis 1 *Countries converging on a market led form of institutions should have higher levels of aggregate entrepreneurial activity than non-market form of institutions, therefore showing that institutional convergence perspectives can explain the impact of institutions on entrepreneurship*

Institutional Diversity to Explain Entrepreneurship: Functional Equivalence and Equifinality

Whilst the comparative institutionalism literature pays close attention to institutional complementarity, it also argues that the political economy landscape is defined by diversity, which leads to ‘bifurcated convergence’. For many comparative institutionalism scholars, countries can achieve general efficiencies not just by liberalism, but rather by institutionalizing strategic forms of coordination. There is not ‘one best way’ but rather ‘functional equivalents’ through the mechanism of ‘institutional coherence’. This

study aims to estimate the effects of varied forms of institutional configuration upon entrepreneurial activity. Is successful aggregate entrepreneurial performance therefore a function of institutional coherence? When the political economy coordinated effectively, their performance will be better, and the result will be better overall economic performance. Hall & Soskice (2001), Hall & Gingerich (2009) and Kenworthy (2006) assert that institutional coherence, and thus effective coordination can exist in both coordinated led market economies and liberal market economies. Although each mode of capitalism is unique, it is not argued that one is superior to another. As Hall & Soskice (2001) argue, both liberal and coordinated market economies seem capable of providing satisfactory levels of long-run economic performance. If the actions of economic agents depend on institutional coherence, then the question to be asked is ‘how coherent are your institutions’?

A political economies institutional configuration is deemed more coherent and more coordinated to the degree to which (i) its institutions within each sphere are closer to the polar types of a coordinated mode of capitalism or market based mode of capitalism. This is in contrast to being ‘in-between’ these two types. Secondly (ii) its institutions are consistent across all institutional sub-spheres, that is, having no competing institutional logics. Incoherence is therefore defined as neither matching closely the two modes of capitalism, or having liberal orientated institutions in some sub-spheres yet coordinated led institutions in neighbouring sub-spheres. This would lead to a situation where institutional complementarities cannot be maintained.

There are several precedents in the comparative political economy literature for the notion that coherence affects national economic performance. Greater institutional coherence increases the benefits from institutional complementarities, increasing the agents ability to exploit the benefits yielded by the complementarities (Hopner, 2005).

Coherence allows firms to coordinate effectively given the complementarities do not exhibit inconsistencies or contradictions in their institutional logics - the 'system integration' - of the national models of embedded capitalism will be continuously established, restored, redefined and defended against all sorts of disorganizing forces (Streeck, 2001).

Institutions that are consistent across all institutional sub-spheres promotes stability (Amable, 2003), facilitates coherence which structures logical form, conventions and rules of the game that shape the logics governing economic decision. These established institutional structures explain the sources and variations of endowments enjoyed by entrepreneurs (Yueng, 2002). This in turn conditions the types, levels and quality of endowments from which entrepreneurs can exploit.

Added, a pervasive state which is a hallmark of incoherent models crowds out private enterprise (Baumol et al, 2007). Those countries which exhibit weak institutional calibration and institutional voids are those that can be defined as institutionally incoherent - those in-between types of capitalism which have a contradictory mix of liberal and coordinated institutions. Here, the state overcomes weak institutional calibration by providing the correction of coordination failures. This pervasive state activity is therefore a process of non-market coordination displayed by the course of large state dependence (Molina & Rhodes, 2007). Mixed state and market interaction is therefore the dominant form of coordination, with the interaction between freely contracting actors, such as entrepreneurs proving extremely difficult to build. This perpetuates long-term inefficient and unstable equilibriums which is in itself not conducive to general private entrepreneurial activity (Baumol et al, 2007). Baumol et al (2007) refers to these types of capitalism as "State-guided" and "Oligarchic"; "failing to create conditions for small-and-medium-sized business to flourish" (Baumol et al,

2007, pg. 76). Overall, one could hypothesise that institutional (in-)coherence is (bad) good for entrepreneurship, through two main channels, (1) greater logic *provision of endowments* and, (2) a *pervasive state* directs production, regulation and correction of coordination failures which derive from the institutional incoherence and their competing institutional logics.

The following hypothesis aims to test the institutional complementarities, coherence and functional equivalence perspective:

Hypothesis 2 *Rates of aggregate entrepreneurship should be higher in nations where levels of market led institutional complementarities or egalitarian led institutional complementarities are high across spheres of the political economy, but lower in nations where neither type of coordination and complementarity is so well developed, or market and strategic coordination are combined*

4.4.2.3 Variables

Dependant Variable: Total Entrepreneurial Activity

A key outcome of the world-leading GEM (Global Entrepreneurship Monitor) project is the consistent, widely used and internationally recognised comparable measure of entrepreneurship, the Total Entrepreneurship Activity (TEA) rates. The TEA rate measures the proportion of working-age adults in the population who are either involved in the process of starting-up business or are active owner-managers of enterprises less than 42 months old (GEM, 2017). Here, entrepreneurship is defined as an "attempt

at a new business or new venture creation, such as self-employment, a new business organisation, or the expansion of an existing business" (GEM, 2017).

The TEA measure is based on data collected by method of annual surveys, through the process of telephone and face-to-face interviews with a minimum of 2000 respondents per nation (Reynolds et al, 2005). It has become the key focal statistic for entrepreneurship studies measuring the allocation of entrepreneurial activity amongst countries, allowing the comparative international entrepreneurship sub-discipline to gain 'significant traction' (Terjesen et al, 2013). Comparative international entrepreneurship is primarily involved with understanding and explaining the divergent levels of entrepreneurship between countries; why are some countries more entrepreneurial than others (Hessels et al, 2008; Oviatt & McDougall, 2005)? GEM data has allowed entrepreneurial studies to further this research domain. Indeed, TEA based GEM data is widely acknowledged to be the best source of comparative entrepreneurship data in the world (Terjesen & Hessels, 2009) and have been applied in studies published in leading journals (i.e. Bowen & Clercq, 2008; Stenholm et al, 2013; Urbano & Alvarez, 2014; Simon-Moya, 2014).

This study utilises data from the Global Entrepreneurship Monitor for several reasons. Firstly, given aggregate based data was developed from a population survey heightens the richness and validity of the captured information. The key advantage of the GEM methodology is that the sample is drawn from the whole working age population in each country sample, and therefore captures both entrepreneurs and non-entrepreneurs (Aidis et al, 2008). Secondly, GEM data provides a wide scope of countries over a 20-year period. The key issue for international entrepreneurship scholars is the accessibility of reliable and 'complete' datasets (Tejersen et al, 2013; Reynolds et al, 2005), and the wide range of available country data provides studies

with the potential to undertake comparative analysis. Details for the treatment of missing data is detailed in the data structure section.

As referred to in the conceptualisation narrative of section 3.3, this thesis considers entrepreneurship to be an aggregate activity of nations, measuring the attempt at a new business or new venture creation, such as self-employment, a new business organisation, or the expansion of an existing business at the national scale of resolution. This is the in view of the numerous different theoretical approaches to the understanding of entrepreneurship and their related concepts.

Independent Variable: Specifying Institutional Coordination & Complementarities

The notion of ‘institutional complementarity’ is widely used in comparative institutional analysis of capitalism to express the idea that certain institutional forms, when jointly combined, continue to reinforce each other and contribute to improving the functioning, stability and coherence of specific institutional configurations or ‘models of capitalism. The existence of institutional complementarities explains how differentiated ‘varieties of capitalism’ may exist based on different complementarities between institutional forms (Amable, 2016). Taking account of institutional complementarities is novel for several reasons. Firstly, the existence of several feasible combinations of complementary institutions reinforced against the conception that there is an existence of a ‘one best set’ of combination, and therefore political economies should converge and reform in such a singular direction. Differently, an acceptance of the concept of complementarity disregards the search for the ‘best’ growth model and institutional form, but rather ignites empirical discussion about how efficiencies can be gained from varied forms of

institutional configuration (e.g. see the literature by Herrmann, 2019; Amable, 2016; Markus & Mendelski, 2015).

Secondly, institutional complementarity provides important insight into institutional change, and at a finer grained level, structural reform for economic efficiencies. Structural reform aimed at altering the composition of given institution(s) may cause incoherence or disequilibria that result in the weakening of the stability of the institutional system which would otherwise offer general efficiencies to micro-agents (Hall & Gingerich, 2009; Amable, 2016). This has importance implications for public policy and represents a potential fruitful avenue in current economic policy orthodoxy. For example, the impact of the European Union ‘Lisbon Agenda’ has been called into question in reference to its impact on the coherence of non-liberal capitalist models (Amable, 2016). Combining these views highlights that the stability of differentiated varieties stems from their economic competitiveness, which can be achieved via the combinations of specific institutions. These mechanisms explain the absence of convergence towards a unique, liberal variant that neoclassical economics views as unavoidable.

Whilst a pivotal theme of comparative institutionalism literature, probing the empirical setting of institutional complementarities has been under-represented and confined to a narrow set of studies. This seems surprising given that the varieties of capitalism literature argue that the nature of institutional complementarities has important implications for country level outcomes. Nonetheless, applications of the institutional complementarity hypothesis can be narrowed to two studies; Hall and Gingerich (2009) and Kenworthy (2006). These two studies offer unique methodological approaches to ‘quantifying’ (for empirical investigation) the extent of institutional complementarities within countries. Testing the varieties of capitalism hypothesis that bifurcated institutional complementarities lead to general efficiencies and superior

economic growth, Hall and Gingerich (2009) develop measures that attempt to gauge the degree to which countries rely on non-market economic institutions. Measures are created via factor analysis of six indicators, each measured as of the early to mid-1990s. The factor analysis yielded a single factor for each institutional sub-sphere, which was ‘balanced’ to measure the marginal efficiencies amongst the present institutions. This yielded a methodological approach which was constructed in an objective and deductive manner providing ‘hard’ indicators (Markus & Mendelski, 2015; Dilli et al, 2018).

An alternative strategy for quantifying the extent of institutional complementarities could be subjective ‘scoring’ of countries based on primary and secondary sources, as used by Kenworthy (2006). Taking a ‘softer’ approach, Kenworthy attempts to create a simple ranked grouping of countries in terms of their nature of institutional complementarity; are they strongly present, or not present at all. In doing so, the “reliability of the measure weakens”, but attempts to "heighten its validity" (Kenworthy, 2006). Given the often disagreement in placing countries along the LME-CME continuum, providing subjective ‘placements’ of countries into ‘ideal types’ based on present literature could yield inconsistent and incoherent results. For example, there is much debate over the placements of Japan and France, whilst recent discussion about the liberal erosion of the Scandinavian models of capitalism.

To measure the nature of institutional complementarity, this study follows an objective approach to develop a ‘balancing’ term. This study firstly develops a ‘coordination indices’ for each institutional sub-sphere. Using the latent factors created in the factor analysis (Step 1), constructing coordination indices allows an insight into the degree to which a countries institution is market-based through to non-market modes of coordination. Standardized Rubin-Anderson factor scores produced for each countries latent factor are normalized and processed into the ‘coordination indices’.

This allows the study to define the nature of diversity between institutional sub-spheres and provides a framework to assess the ‘type and degree’ of coordination present. As comparative institutionalism theory suggests, general efficiencies arise from either market led coordination or strategic led coordination; these are the coherent forms of institutions (Hall & Soskice, 2001; Hall & Gingerich, 2009; Amable, 2016). The coordination indices measuring the balance of market and strategic coordination in each of the four institutional sub-spheres for country i is equal to:

$$\phi \text{ Coordination Indices}_i = \sum_{j=1}^n x_{ji} \left[\frac{1}{\sum_{j=1}^n \max(x_{ji})} \right] \quad (4.1)$$

Where ‘ ϕ ’ refers to the institutional sub-spheres (i.e. labour market [LM], product market [PM], education system [ES], financial system [FS]) for country i , where x_j refers to a latent factor within ϕ sub-system ($j = 1, \dots, n$). These indices define where each countries institutional sub-sphere is situated upon a market versus non-market continuum extended upon the transformations used by Hall & Gingerich (2009). Any time dimension would be cross-sectional at the constant level of $t = 1$. Each latent factor x_n is normalized to increase interpretability by the following treatment (it can be noted that this process transfers the base into an arbitrary control adjusting for the $0 < n < 1$ continuum of the data):

$$(x_n - \min x) / (\max x - \min x)$$

The aim of this variable specification is to measure along a continuum of market versus non-market forms of coordination which links in to the institutional coherence literature (Hall & Gingerich, 2009; Markus & Mendelski, 2015; Kenworthy, 2006). For example, coordination scores which are more akin to those of market-based clusters

(LMEs) will have lower absolute scores as represented in the latent variables used to calculate them. Here, there is not one best or most significant factor for each institutional dimension, allowing an equal balanced contribution of each institutional dimension within each sub-sphere coordination term. After-all, there is no theoretical precedent to favour or weight one institutional factor over another, hence why averaging is a valid transformation technique. This provides a clear and robust assessment on the nature of the coordination level continuum in each institutional sub-sphere. This is a similar yet improved extension of the ‘coordination index’ of Hall and Gingerich (2009) who also do not specify one institutional dimension as more important than an other.

To measure ‘institutional complementarity’ (IC_i), this study specifies the following variable (IC), giving a balance of non market coordination in country i at time $t = 1$ normalised to rest between 0-1:

$$IC_i = \left[\left[\sum_{j=1}^n x_{ji} \left[\sum_{j=1}^n \max(x_{ji}) \right]^{-1} \right]_P \right] \left[\left[\sum_{j=1}^n (x_{ji}) \left[\sum_{j=1}^n \max(x_{ji}) \right]^{-1} \right]_L \right] \left[\left[\sum_{j=1}^n x_{ji} \left[\sum_{j=1}^n \max(x_{ji}) \right]^{-1} \right]_F \right] \left[\left[\sum_{j=1}^n x_{ji} \left[\sum_{j=1}^n \max(x_{ji}) \right]^{-1} \right]_E \right] \quad (4.2)$$

Where $[\dots]_P$ refers to the product market score of coordination (PM) for country i , $[\dots]_L$ refers to the labour market coordination (LM) for country i , $[\dots]_E$ refers to the education system coordination (ES) score for country i and $[\dots]_F$ refers to the financial system coordination (FS) score for country i . This measure characterizes both the format of institutional complementarity, but also the degree of strength/‘tightness’ of the complementarity form. Both weak and strong complementarity forms may exist within each cluster typology, given that cluster analysis assesses only ‘descriptive

similarities' (Boyer, 1987; Hall & Gingerich, 2009), yet the complementary measure assesses 'functional complementarity' (Boyer, 1987; Amable, 2003). Cluster analysis emphasizes a certain number of key characteristics used in the analytical representation of actual economies, not to reproduce with the utmost fidelity all the possible details of existing configurations (Amable, 2016). Thus, any statistical tests aiming to investigate comparative distributions of categorical variables in the form of varied capitalist clusters cannot carry forth the hypothesis of 'strong complementarities present'. This measure therefore complements the cluster analysis and provides an overlap between the two forms of data analysis where the 'strength' of complementarities can only be assumed, averaged and estimated. Countries with higher scores will indicate a continuum away from market based complementarities, specifically in the form of egalitarian coordination based complementarities.

Coordination as a Crucial 'Diversity' Dimension

This analysis is built on the core contention of comparative capitalism: that developed economies differ from one another according to the extent to which coordination is determined by market versus non-market (strategic) coordination (Hall & Soskice, 2001). 'Coordination' stems from the problematic relationships between transaction costs and market imperfections to overcome the principal-agent relationships of economic actors (Milgrom & Roberts, 1992). Where 'hierarchies' are used to secure the cooperation of actors, they may still find themselves with internal frictions and imperfections (such as moral hazard and adverse selection). In such cases, effective operation may entail key coordination mechanisms such as contracts. In short, because capabilities of economic action is determined by relations, actors may encounter many coordination problems. The political economies success depends substantially on its

ability to coordinate actors effectively and efficiently. Hall & Soskice (2001) highlight two guiding coordination mechanisms: market and strategic coordination mechanisms.

Of course, as raised by Hall & Soskice (2001), the nature of coordination is difficult to measure directly. However the concept of coordination is determined by the type and nature of institutions available to support it. As outlined, a principal components analysis designed to identify commonalities that may be latent concepts in themselves but correlate with a range of observable ‘manifest’ variables provides an appropriate technique for identifying the character of coordination and therefore the diversity between political economies. By performing factor analysis on a set of institutional measures that are commonly associated with one type of coordination or another, and by aggregating these variables through Equation 4.1, this study can assess the dimensions of market and non-market coordination posited as a key dimension in comparative institutionalism. To determine the efficacy and construct validity of such diversity dimension, three threshold statements are used to validate this hypothesis:

1) The character of coordination constitutes a key dimension stretching across institutional sub-spheres of the political economy

This is validated given this studies latent variables statistically account for observed covariance between sets of indicators representing institutional conditions associated with different types of coordination in these sub-spheres. This is further specified by descriptions of the underlying manifest variables (i.e. wage coordination, low loadings equate to decentralised market coordination, high loadings equate to centralised strategic coordination).

2) The underlying latent variables within each institutional sub-sphere reflects variation along a spectrum running from market to non-market coordination, representative of the key hypotheses generated in a prior comparative capitalism literature/typologies

This is validated given there is large consistencies in the factor loadings produced by both principal components analysis and cluster analysis. Latent and aggregated coordination measures of institutional sub-spheres in support of market coordination loads negatively (positively) onto a given latent variable, other indicators of support for market coordination should also show other negative (positive) factor loadings in other latent variables. This is opposite for non-market strategic coordination. Where there is some inconsistencies, these are played out in the cluster analysis where they have incoherent logics, that is they do not anchor to clusters represented by for example the UK (market) or Germany (strategic), the well established countries portraying such coordination dimensions.

3) It is possible to identify a distinctive set of market based economies (akin close to LME features) and another set of coordinated economies (akin to CME features where applicable), which descriptively make use of market coordination and strategic coordination respectively

Cluster analysis using construct scores of latent variables should echo, if correct, a division between market led countries (with some core similarities in terms of country membership and features) which are defined towards the market end of the coordination dimensions for each sub-sphere, and vice-versa for coordinated market.

4.4.2.4 Control Variables

GDP per capita

Prior research has identified a statistical relationship between a country's level of entrepreneurship and its level of economic development, as measured by GDP per capita (e.g. Wennekers et al, 2005; Acs et al, 2008; Van Stel et al, 2005). Some studies suggest a positive effect of economic development on entrepreneurship (Wong et al, 2005); other studies specify a negative relationship (Urbano & Alvarez, 2014; McMullen et al, 2008; Bjornskov & Foss, 2008), whilst some argue there is no direct effect (Ovaska & Sobel, 2005). Irrespective of the disputes in statistical direction, it is widely acknowledged that the level of economic development as measured by GDP per capita has significant influence over the rates of entrepreneurial activity. Therefore, the effect of GDP per capita was used to control for the 'natural rate' of entrepreneurship in economic development (Wennekers et al, 2005). To do so, a measure of GDP per capita in constant 2005 US dollars for the 6-year period was included in the analysis. Data for this measure was obtained from the World Bank database, a reputable source of macroeconomic data. Similar to De Clercq et al (2013) and Urbano & Alvarez (2014), the natural logarithm of GDP per capita was taken.

Unemployment

The rate of entrepreneurial activity is said to be influenced by the level of unemployment in nations. Studies have tended to take two 'tracks' on the effect of unemployment. Firstly, it has been suggested that compared to employed people, the opportunity cost of engaging in new business formation is less for unemployed people, thus unem-

ployment maybe a driver of entrepreneurship (Noorderhaven et al, 2004). Secondly, unemployment rates may be due to a lack of derived demand for labour, linked to a drop in the economies activity. Fewer options to find a job in these periods may force people by circumstance to create new companies (Spencer & Gomez, 2004; Verheul et al, 2002). Unemployment affects the type of entrepreneurship in varied ways, thus filtering into the aggregate levels of entrepreneurial activities. To control for unemployment, a measure of the unemployment rate for the period of 2010 to 2015 was included in this study. This was based on data collected from the World Bank database, who defines the unemployment rate is a given year as the ‘percentage of the active population out of work, but seeking employment and available to perform a job’.

Stock of Inward Foreign Direct Investment (FDI) relative to GDP

Accounting for Verheul’s et al (2002) ‘eclectic approach to entrepreneurship’, the presence of foreign-owned enterprises within a country can be characterised as a ‘demand-side’ factor likely to influence a countries level of entrepreneurship (Bowen & Clerq, 2008). To capture the presence of foreign-owned enterprises within a country, this study uses the stock of inward foreign direct investment relative to a country’s GDP. It is acknowledged that there are varied approaches to accounting for FDI within countries. This study utilises the stock of FDI rather than the flow of FDI measure for two reasons. Firstly, FDI flows are a function of time thus volatile, and secondly, FDI flow measurements were more likely to be correlated with other macro-level variables included in this analysis (GDP per capita). Data on the stock of FDI relative to GDP were taken from the United Nations Conference on Trade and Development (UNCTAD) database, a reputable source for national statistics on balance of payments matters.

Dependency Ratio

Dependency ratios capture variations in the proportions of children, elderly people, and working-age people in the population that imply the dependency burden that the working-age population bears in relation to children and the elderly. Patterns of development in a country are partly determined by the age composition of the population; different age groups have varying impacts on labour pressures, resource use and taxation policy (World Bank, 2017). The age composition of societies is said to influence the propensity to be entrepreneurial (Watkins-Mathys, 2012). Government responses in the form of emphasising education and supporting new enterprise have been attributed to the socioeconomic pressures placed on societies by a dependant workforce (Bloom & Canning, 2004). At an individual level, changes in taxation policy and pension provision in response to high dependency rates may result in the incentive of people to seek a ‘long term’ solution in the form of deferring retirement or considering self-employment (Bloom et al, 2010). Public policy approaches of Government therefore alter the opportunity cost attached to self-employment and this should be accounted for. To control for the age composition of societies, a measure of the dependency ratio for the period of 2010 to 2015 was taken from the World Bank.

Population Density

Population density has been linked with greater new business formation rates. It is argued that highly dense countries allow for more local market opportunities related to product markets and necessary inputs (Wagner & Sternberg, 2004; Capelleras et al, 2015; 2018) than less dense countries (Armington & Acs, 2002). This in turn facilitates the entry of new firms (Todtling & Wanzenbock, 2003; Stam et al, 2012). Densely pop-

ulated countries (and regions) are often defined by population diversity; greater scope for complementary products or services and varieties in demand, which Bosma et al (2008) argues stimulates the creation of new business enterprise. Nascent entrepreneurs are supported by closer proximities to consumer markets, established infrastructure and the availability of necessary skilled labour. Networking and collaboration potential with customers, suppliers and governmental organisations further extends the survival potential of new business enterprise as supported by the population density (Kibler et al, 2014). As empirical work suggests, higher population density positively impacts the creation of new business. However, these countries and regions can also undermine entrepreneurial activities, particularly in the form of increased competition, the finite nature of resource allocation and higher barriers to entry (Bosma et al, 2008). Nevertheless, it is apparent that the nature of population densities has a statistically significant impact upon the rates of entrepreneurship and therefore should be accounted for within estimation models. Data on population density for each country was taken from the World Bank over a six-year period; 2010 to 2015. Table 4.4 summarises the applied variables.

4.4.2.5 Data Structure

Data for the dependant and explanatory control variables were collected across a six-year period between 2010 and 2015. For these variables, data was collected for 29 countries, down from the 30 countries for which Chapter 5 is built upon. Given the lack of GEM entrepreneurial data for New Zealand, this country was dropped for the panel analysis. Furthermore, GEM data was occasionally missing for certain years and thus was estimated using an unbalanced panel methodology in the form of linear

Table 4.4 Overview of Panel Data Variables

Variable	Definition	Source	Application in Key Studies
<i>Dependant Variable</i>			
Total Early Stage Entrepreneurial Activity (TEA)	TEA measures represent early-stage activity, including the number of people currently setting up a business (nascent) and owning/managing a business existing up to 3.5 years relative to the adult population 18-64 years in a country (%)	GEM (2017)	Bowen & De Clercq, 2008; Stenholm, et al., 2013; Urbano & Alvarez, 2014; Simon-Moya, 2014; Aidis et al, 2008
<i>Independent Variables</i>			
Product Market Coordination (PM_i)	The level of non-market coordination in a countries product market	This Study (Chapter 5)	N/A
Labour Market Coordination (LM_i)	The level of non-market coordination in a countries labour market	This Study (Chapter 5)	N/A
Education System Coordination (ES_i)	The level of non-market coordination in a countries education system	This Study (Chapter 5)	N/A
Financial System Coordination (FS_i)	The level of non-market coordination in a countries financial system	This Study (Chapter 5)	N/A
Institutional Complementarities (IC_i)	The aggregate level of non-market coordination in the political economy (0-1)	This Study (Chapter 5 & 6)	N/A
<i>Control Variables</i>			
$\ln GDP$ per capita	Natural Log of GDP per capita in constant US dollars	World Bank (2017)	Spencer & Gomez (2004), De Clercq et al (2013), Urbano & Alvarez (2014), Dheer (2016), Wennekers et al (2005), Acs et al (2008), Van Stel et al (2005)
Unemployment Rate	% of the active population out of work, but seeking employment and available to perform a job	World Bank (2017)	Staber & Bogenhold (1993), Bergmann & Sternberg (2007), Horisch et al (2016), Noorderhaven et al (2004)
Stock of Inward FDI	Stock of Inward FDI relative to GDP (%)	UNCTAD (2017)	Bowen & De Clercq (2008), Wach & Wojciechowski (2016), Barbosa & Eiriz (2009), Gorg & Strobl (2002)
Dependency Ratio	Ratio of dependents—people younger than 15 or older than 64—to the working-age population—those ages 15-64. Data are shown as the proportion of dependents per 100 working-age population	World Bank (2017)	Watkins-Mathys (2012), Zhang (2008), Bloom & Canning (2004), Bloom et al (2010)
Population Density	Population divided by land area in square kilometres	World Bank (2017)	Armington & Acs (2002), Todtling & Wazenbrock (2003), Wagner & Sternberg (2004), Reynolds et al (1994), Audretsch & Fritsch (1994), Bosma et al (2008), Kibler et al (2014)

interpolation (Maximum Likelihood Estimation) under the assumptions of Missing Completely at Random (MCAR).

Where the control variables and dependant variables are time-variant (t), the institutional based complementarity term is constant over time. Although time-variant institutional variables would be preferable, the difficulties of measuring coordination and data limitations preclude them. However, it is believed that the inclusion of these institutional complementarity terms are appropriate because they capture institutional diversity widely seen as ‘stable over time’ (Hall & Gingerich, 2009).

The final sample comprises 145 observations. It is considered that a slightly reduced sample size is a worthwhile tradeoff to be able to capture a wider range of condition (Thai & Turkina, 2013). We thus consider our sample within an acceptable range of sample size limitations, and larger than similar comparative empirical studies using smaller samples (e.g. Sobel, 2008; Verheul et al, 2006; Krasniqi & Desai, 2016; Bowen & De Clercq, 2008).

4.4.2.6 Model Specification & Estimation Strategy

The baseline equation underlying the estimation takes general form of the following ‘linear unobserved effects model’:

$$y_{it} = \alpha_t + z_i\beta + x_{it}\gamma + c_i + u_{it}, t = 1, \dots, T; i = 1, \dots, N$$

where α_t are the time period dummy intercepts treated as parameters to be estimated, x_{it} is a $1 \times K$ row vector which specifies control variables which change

across i and t , z_i is a set of explanatory variables which change across units, and the dependent variable y_{it} is a vector of dimension $N \times T$ that contains observations of individual countries (i) in year (t). Composite errors at time t take the form of:

$$v_{it} = c_i + u_{it}$$

where c_i is the unobserved individual heterogeneity and u_{it} are the idiosyncratic errors/disturbances.

There are several possible estimators for the parameters of interest (β, γ) . Two estimation strategies are employed for each model of interest as a process of comparison and comparative observation. As utilised in the literature, it is a useful strategy to compare the coefficients of varied estimation methods to increase the confidence and consistency in parameter estimates. Estimations may yield consistent results, yet may not be efficient. Providing two varied estimation methods allows us to observe the general efficiencies by comparative observation. The two estimation strategies employed were pooled ordinary least squares with panel-corrected standard errors (POLS) and the generalised least squares random effects estimator (GLS-RE) for the key multiplicative models of interest⁴. Both estimators take the form of distributed lag models which allows us to move beyond ‘contemporaneous exogeneity’ merely being an ‘assumption’. Pooled OLS estimations group cross-sections across time under the assumption of observable individual heterogeneity. This technique produces robust standard errors in

⁴Random effects estimator is based on a matrix-weighted average of a fixed effects estimator which is generated by performing GLS on variables that have been multiplied by an idempotent matrix which transforms them into differences from their means, and a between-estimator generated by performing GLS on variables that have been transformed into ones reflecting the difference between panel means and the variable mean. The random effects estimator converges to the GLS estimator as the efficient estimate of the between-group variance component goes to zero, and to the fixed-effect estimator as the between-group variances towards infinity. The model treats panel-specific effects as random disturbances, as they would be if the panel represent a random sample from a larger population. That is, errors are assumed to vary stochastically over units and time.

the presence of an error term that is heteroskedastic and contemporaneously correlated across countries. Random effects generalised least squares (GLS-RE) model assumes existing individual heterogeneity are uncorrelated with explanatory variables, thus produces consistent coefficient estimates and standard errors in the presence of a composite error term that consists of a time invariant, country-specific idiosyncratic error and a traditional country-year disturbance (Hsiao, 1986). It is acknowledged that there are several other estimation approaches to our unobserved effects model, namely fixed effects (FE) and first differencing (FD). Given that both estimators measure the difference between the ratio of the squared sum of residuals over time, summed over all panels, to the sum of the squared errors, any time-invariant explanatories are then removed from the equation. Therefore, it is argued that POLS and GLS-RE provide better estimators for the parameters of interest, given that $z_i\beta$ is time invariant.

The estimation strategy comprises of four steps, which are based upon the flow of the hypothesis structure. Step 1 is estimating a baseline model by adding the country-level macro controls to the model equation. The baseline model is specified by equation 1 below, which estimates the relationship between total early-stage entrepreneurial activity (TEA) and macro level variables.

At step 2, there is the inclusion of an additional set of institutional based equations to further explain entrepreneurial activity. They are tasked with testing the following hypothesis:

Hypothesis 1 *Countries converging on a market led form of institutions should have higher levels of aggregate entrepreneurial activity than non-market form of institutions, therefore showing that institutional convergence perspectives can explain the impact of institutions on entrepreneurship*

If correct, there should be a statistically insignificant non-linear relationship between institutional spheres and TEA, but rather a significant negative linear relationship. Differently, converging on a liberal institutional format will have an estimated positive impact on entrepreneurship, and therefore provide support for economic liberalization as a form of entrepreneurship public policy. Estimation of the effect of liberal institutional forms on aggregate entrepreneurial performance is tested using regression models of the following terms:

$$\begin{aligned} TEARate_{it} = & \alpha_t + \beta_1 LnGDP_{it-1} + \beta_2 PD_{it-1} + \beta_3 Un_{it-1} \\ & + \beta_4 DepR_{it-1} + \beta_5 FDI_{it-1} + c_i + u_{it} \end{aligned} \quad (4.3)$$

$$\begin{aligned} TEARate_{it} = & \alpha_t + \beta_1 LM_i + \beta_2 LM_i^2 + \beta_3 LnGDP_{it-1} + \beta_4 PD_{it-1} \\ & + \beta_5 Un_{it-1} + \beta_6 DepR_{it-1} + \beta_7 FDI_{it-1} + c_i + u_{it} \end{aligned} \quad (4.4)$$

$$\begin{aligned} TEARate_{it} = & \alpha_t + \beta_1 PM_i + \beta_2 PM_i^2 + \beta_3 LnGDP_{it-1} + \beta_4 PD_{it-1} \\ & + \beta_5 Un_{it-1} + \beta_6 DepR_{it-1} + \beta_7 FDI_{it-1} + c_i + u_{it} \end{aligned} \quad (4.5)$$

$$\begin{aligned} TEARate_{it} = & \alpha_t + \beta_1 ES_i + \beta_2 ES_i^2 + \beta_3 LnGDP_{it-1} + \beta_4 PD_{it-1} \\ & + \beta_5 Un_{it-1} + \beta_6 DepR_{it-1} + \beta_7 FDI_{it-1} + c_i + u_{it} \end{aligned} \quad (4.6)$$

$$\begin{aligned} TEARate_{it} = & \alpha_t + \beta_1 FS_i + \beta_2 FS_i^2 + \beta_3 LnGDP_{it-1} + \beta_4 PD_{it-1} \\ & + \beta_5 Un_{it-1} + \beta_6 DepR_{it-1} + \beta_7 FDI_{it-1} + c_i + u_{it} \end{aligned} \quad (4.7)$$

The first regression model (Equation 4.3) is a first order base model with control variables only. This study employs a range of macro-level control variable which have been used in previous studies: $LnGDP_{it-1}$ is the log of gross domestic product per capita for country i , between 2010 and 2015. PD_{it-1} represents population density,

following the works of Sobel (2008) who argues that densely populated countries can benefit from agglomeration economies (Capelleras et al, 2018). Un_{it-1} represents the average unemployment rate, where the level of unemployment is seen to influence entrepreneurial activity (Staber & Bogenhold, 1993; Bergmann & Sternberg, 2007; Horisch et al, 2017). $DepR_{it-1}$ accounts for the dependency ratio of the country measured as the share of the population below the age of 15 or above the age of 65. A higher proportion of dependents is expected to influence entrepreneurial activity (Autio & Fu, 2015) and indirectly through the expected lower rates of economic growth (Hall & Gingerich, 2009). The final control variable, FDI_{it-1} , measures the FDI inward stock relative to GDP, a usual proxy for foreign firm presence (Bowen & De Clercq, 2008). Time dummies are included as represented by α_t to control for potential random aggregate shocks in entrepreneurial rates over time (e.g. aggregate demand, real business cycles).

The second order regression models (Equations 4.4 to 4.7) apply the single coordination effects to estimate aggregate entrepreneurial performance, where β_1 and β_2 are parameters of interest in models 2(a)-2(d) using the coordination indices for each sub-sphere specified in equation 4.1. These parameters measure an array of institutional based variables. Firstly, LM_i specifies the level of non-market coordination in a countries labour market, as measured from 0 to 1. Low values of LM_i infers a liberal, flexible and decentralised labour market, akin to the characteristics of market based political economies. Increasing values represent a movement away from a market based labour market, with high values representative of a more interventionist market, with sizeable magnitudes akin to those of coordinated market economies. These coordination indices are based on the aggregation of equally weighted factor variables developed through the principal components analysis of Step 1. The additive models all utilise squared polynomial terms to test non-linearity in principle. An acceptance of these

statistical relationships would ex-post imply itself as the null hypothesis to the first hypothesis, which in turn would suggest there is no convergence on a ‘best set’, but rather non-linear functional equivalents and equifinality.

Model 3 provides a linear regression model where the equation accounts for institutional complementarity (Equation 4.2). Here, $\hat{\beta}_1$ is of interest. The inclusion of the IC_i terms tests one of two tenants of the comparative institutionalism literature namely institutional complementarities; the functional relationships between institutions provides more statistical power than testing institutions in isolation. However, at this stage, the models are designed to test institutional convergence, hence hypothesised linear relationship. This contrasts with the central theme within comparative institutionalism of institutional diversity.

$$TEARate_{it} = \alpha_t + \beta_1 IC_i + \beta_2 LnGDP_{it-1} + \beta_3 PD_{it-1} + \beta_4 Un_{it-1} + \beta_5 DepR_{it-1} + \beta_6 FDI_{it-1} + c_i + u_{it} \quad (4.8)$$

At step 4, the model introduces a squared institutional complementarity term (IC_i^2). Model 4 aims to test non-linearity and statistically evaluates the following hypothesis:

Hypothesis 2 *Rates of aggregate entrepreneurship should be higher in nations where levels of market led institutional complementarities or egalitarian led institutional complementarities are high across spheres of the political economy, but lower in nations where neither type of coordination and complementarity is so well developed, or market and strategic coordination are combined*

If correct, there should be a significant quadratic non-linear effect of the IC_i terms on TEA. More importantly, the coefficients should be inverse and of sizeable proportions representing the significance of diversity and power of dual yet varied complementarity sets. This would highlight that varied forms of complementarities leads to higher aggregate performance versus those countries that do not conform to either, or show weaker forms of complementarities. Another way, it implies that aggregate entrepreneurship performance should be higher in nations whose institutionalized practices correspond more closely to relatively pure forms of market and non-market coordination types (hence the most coherent). Institutional diversity is therefore a useful perspective to explain the variance of aggregate entrepreneurship, that is, there is not ‘one-best-set’ of institutions. Using a non-parametric estimation technique allows the functional form of a fit to data to be obtained in the absence of any guiding ‘linear’ treatment. Estimation of the effect of institutional diversity and complementarity is tested using the sample regression function of the following terms:

$$\begin{aligned}
 TEARate_{it} = & \alpha_t + \beta_1 IC_i + \beta_2 IC_i^2 + \beta_3 LnGDP_{it-1} + \beta_4 PD_{it-1} \\
 & + \beta_5 Un_{it-1} + \beta_6 DepR_{it-1} + \beta_7 FDI_{it-1} + c_i + u_{it}
 \end{aligned} \tag{4.9}$$

Specifically, for the institutional diversity perspective to hold, β_1 must be both significant and negative, whilst β_2 must be significant and positive, where $\hat{\beta}_i$ are parameters to be estimated in Equation 4.9. This would outline that the quadratic effect has significant statistical power, and highlights a ‘U’ shape relationship between varied forms of complementarities and aggregate entrepreneurial performance. Aggregate rates of entrepreneurship are higher the degree to which there is institutional complementarity strength; the more complementarities are built upon market or strategic coordination, the higher the estimated rates of entrepreneurship. Weaker forms of complementarity

lend to reduced rates of entrepreneurial activity. Institutional complementarity term values nearing either 0 or 1 would therefore have relative higher aggregate rates of entrepreneurship than intermediate values of increasing values from $0 < n < 1$.

4.5 Chapter Summary

This chapter outlined the overarching research approach and justified the methodology that was employed to achieve the study aims and objectives. It was emphasised that the study adopts a two-pronged quantitative approach based on principal components analysis followed by a multivariate panel analysis. The chapter also explained and justified how data was collected, processed and transformed. Having explained the overarching research and methodological approaches, the study now turns to the next chapter, which is the first of two empirical findings chapters, by outlining and addresses the first research objective: *To ascertain whether capitalist institutional diversity exists, and if so, how can diversities be characterised between political economies.*

Chapter 5

Research Findings (1):

Institutional Capitalist Diversity

5.1 Introduction

This thesis is led by two subsequent channels of methodological enquiry. Firstly, this study undertakes factor analysis to create latent variables which measures the nature of institutional sub-spheres. These factors are then clustered by discriminant cluster analysis to highlight contextually the specific models of capitalism and institutional diversities. Secondly, the institutional factors created are then applied to a panel analysis context in an attempt to understand the relationship between institutional diversity and aggregate entrepreneurial performance.

The purpose of this chapter, which is the first empirical results chapter, is to present and taxonomise the empirical findings from the principal components analysis.

The chapter then documents the results of the subsequent cluster analysis. The first objective of this chapter is to ascertain the underlying linear relationships between manifest institutional variables within each institutional sub-sphere, as guided by the Governance approach theory (Amable, 2003). The chapter then follows with an overview of the institutional variables and reflects against present attempts to measure institutions within the literature.

This follows through into the cluster analysis. The data provided by the factor analysis is used to identify statistical similarities and dissimilarities using cluster analysis. This study highlights fruitful and novel diversity amongst the data sample, identifying several ‘models of capitalism’. This provides the study with an objective contextual taxonomy of institutions and ‘diversities of institutional systems’. This gives a descriptive contextual tool to identify and specify robust institutional differences. The chapter then leads through to a discussion of each of the models of capitalism, with focus on the underlying complementarity structures between institutional sub-spheres. The chapter is drawn to a close by reflecting upon the coherence of such institutional models of capitalism. Overall, this current chapter addresses the following research question:

Research Objective 1:

To ascertain whether capitalist institutional diversity exists, and if so, how can diversities be characterised between political economies.

This research question seeks to fulfil the aim and objective of this study by exploring empirically the institutional diversity of political economies, with the creation of novel factors, descriptive cluster classifications and crucial diversity dimensions.

5.2 Principal Components Analysis

Along the four institutional spheres adopted from the ‘Governance approach’ to comparative institutionalism (Product Markets, Financial System, Labour Market & Education System), the principal components analysis provided 13 meaningful institutional factors as developed from 42 manifest indicators. In terms of the present comparative institutionalism literature, the development of numerous quantitative indicators has generally been lacking, especially whilst assessing institutional logics and spheres which were previously evaluated qualitatively or absent (e.g. Product Markets). Therefore, this study contributes to the comparative institutionalism literature with a more objective perspective to the variance between institutional capitalist configurations. Principal components analysis was conducted separately for each institutional sphere, resulting in numerous uncorrelated components, which were then assessed qualitatively to gauge the underlying ‘meaning’ of each factor and their respective factor loadings. All components were ‘Varimax’ rotated to facilitate interpretation (Abdi & Williams, 2010). Some factor loadings mirrored the factors created in other studies (i.e. stock market capitalization - market based financial system), several provided a fresh angle to institutional measurement, whilst various components provided quantitative indicators for previous rough qualitative assessment (asset specificity in the education system). Again, these results meet the threshold statements of section 4.4.2.3. Each factor is labelled in a bid to best present the underlying variables within it. The following sections outline the findings of the principal components analysis for each institutional sub-sphere. This is set against an explanation of each derived factor component.

5.2.1 Product Markets

The most fundamental dimension separating the heterogeneity of product markets is that of the intensity of competition, which is a natural by-product of the erosion of ‘blanket’ regulation. The configuration of the varieties of product markets can therefore primarily be based on the according type of competition prevailing within such market. However, given intensity of competition remains the key defining dimension of market heterogeneity, the latency of such dimension leads to the difficulty in measurement through the use of simple indicators. This is overcome via addressing certain steps.

Firstly, given this study is concerned with national institutional variance, the measurement of product market variety can be born from a concentrated look at the aggregate national level as opposed to disaggregate, industry levels. It is possible to find data on competition only within a few sectors, usually in the form of concentration indices, which is often an established perspective when observing banking and financial system competition. Secondly, while the state of competition characterises the product market structure well, it fails to represent the underlying institutional foundation. Put differently, competition can be characterised as an ‘output’ variable, whereas we are primarily concerned in understanding the ‘input’ (institutional) variables, which in this case would be the determinants of competition. In short, institutional perspectives need to provide a lens which leads to such ‘symptoms’ as competition. Therefore, a wide collection of product market regulation indicators have been chosen to underpin product market variance. These indicators, when subjected to factor analysis, provide a good perspective to assess the composition and structure of product market competition, and therefore the diversity within and between such markets. This consequently provides an institutional perspective defining the state of product market competition.

Product market regulation (PMR) data has been collected from the OECD PMR database, the most widely used source by studies undertaking research in such area. This data, as developed from qualitative data on laws and regulations of the economy-wide, covers general regulatory issues such as price controls, administration barriers to enterprise and barriers to FDI to name a select few. Based on expert scoring, the qualitative data is turned into quantitative measures, both detailed and synthetic indicators of PMR.

Table 5.1 presents the results of the principal components analysis for the product market. Principal components analysis yields 3 components from an overall 13 indicators taken from the OECD's product market regulation (PMR) database (see Koske et al, 2015; Figure B.2). Given the intricacies and specificities of product market regulation data, three separate PCAs were undertaken to improve the interpretation of outputs as suggested by Nicoletti & Scarpetta (2005). With high loadings of specific governance based indicators, the first factor is labelled 'governance of internal product markets'. This component seemingly represents an axis of increasing regulatory and governance led pressure on domestic product markets, one can consider that countries with intense product market competition will situate themselves low (left hand side) on this axis.

The second factor component is composed of variables representing public and government led involvement in the product market functioning. Scope of state-owned enterprises, government control over enterprises and prevalence of government led price controls load suggestively high with one another. This axis represents the control exerted by the public sector (via government intervention); this factor is labelled 'public involvement in domestic product markets'. The third component is one of explicit protection against foreign competition, with high loadings of barriers to trade, FDI and trade facilitation. Being concerned with the treatment of foreign trade and

Table 5.1 PCA Component Matrix: Product Markets

	Component		
	(1)	(2)	(3)
	‘Governance of Internal Product Market’	‘Public Involvement in Domestic Product Markets’	‘Explicit Protection against Foreign Competition’
Administration Burden for Corporations	0.855		
Administration Burden for Sole Proprietor Firms	0.835		
Communication & Simplification of Rule & Regulations	0.703		
Barriers to Network Sector	0.682		
Legal Barriers to Entry	0.411		
Scope of State Owned Enterprises		0.869	
Govt. Involvement in Network Sector		0.667	
Govt. Control over Private Enterprises		0.647	
Govt. use of Price Controls		0.577	
Govt. use of Command & Control Regulations		0.477	
Barriers to FDI			0.702
Barriers to Trade (Trade Barriers)			0.851
Barriers to Trade Facilitation			0.712
Eigenvalue	2.786	2.284	1.724
Variance Explained (%)	35%	38%	57%
Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO)	0.603	0.610	0.573
Bartlett’s Test of Sphericity ¹ (x ²)	0.000***	0.000***	0.000***

¹ $p < 0.001$ * **; Extraction method: Principal Components Analysis (PCA); Rotation Method: Orthogonal Varimax

capital inflows, this component is labelled ‘explicit protection of foreign competition’. Components 1 and 2 represent inward protection measures and component 3 represents external based protection.

5.2.2 Labour Markets

There are several dimensions to labour market institutions, of which this thesis distinguishes three important ‘prongs’ to the diversity of labour markets. Firstly, this study differentiates labour markets along the prevalence of employment policy, which characterises the extent to which countries are committed to intervening in labour markets. The second aspect of labour market institutions concerns the structure of employment protection. This observes whether there is flexibility over hiring and firing decisions, versus the protection of labour, hence labour rigidity. Labour market flexibility has become a flagship structural adjustment policy (SAP), which involves the increasing use of temporary contracts, unrestricted dismissal rights, short notice periods and the shrinking use of regular contracts. Much work has been conducted around the effect of labour market flexibility, particularly in relation to its positive effects on high growth firms (Acs et al, 2008; Bassanini & Ernst, 2002) and foreign direct investment (e.g. Javorcik & Spatareanu, 2005). As the neoclassical view goes, labour market flexibility increases the economy’s ability to make short-term adjustments achieved through changes in the structural composition of sectors. Regulation of labour is therefore seen as a block on dynamic adjustments, creating lower growth and higher unemployment (Hancke, 2013).

Thirdly, labour market institutions can be characterised by their system of wage bargaining and industrial relations. This assesses the degree to which there is existence

of corporatism amongst the relationship between firms and workers, and to whether common wage moderation is possible. Industrial relations systems can be characterised along a spectrum of centralisation versus decentralised systems, with the latter often the hallmark of the 1980's liberal movements in the UK and USA, the so-called erosion of workers political influence through the decline of trade union powers (Brown & Walsh, 1991). Systems are often characterised as centralised when the wage bargaining process is coordinated among employees hereby trade unions, which have collective bargaining powers, set a uniform band of wages (Bassanini & Ernst, 2002). The type of industrial relations has often been considered crucial in relation to the macroeconomic performance of countries (i.e. Hancke et al, 2007; Hancke, 2013).

Given the 'three prongs' of labour market institutions, principal components analysis was conducted separately for employment policy. Thus, 2 separate PCAs were undertaken. These are presented within Table 5.2. Overall, 3 factors were created from 9 manifest variables, representing employment protection, industrial relations and employment policy respectively. The first factor, expressive to the employment protection dimension of labour markets denotes 'labour market flexibility'. With an eigenvalue of 1.616, indicators such as 'regulation on temporary employment' and 'protection of workers against individual dismissal' load highly together, therefore naturally representing the dichotomy between "flexible" and "rigid" labour markets (Golpe et al, 2008). For example, the factor represents the intensity of restrictions on labour, both through the use of regular and temporary contracts. It is quite widely acknowledged that the most important aspects of labour market flexibility include the ease of use of temporary contracts and the ease of dismissal (Berg, 2015; Darcillon, 2015).

The second factor, representative of the industrial relations system is that of the ‘wage bargaining system’. Single indicators of ‘union density’ and ‘wage bargaining coordination’ (positive pole) contrasts ‘flexibility of wage determination’ (negative pole), with increasing factor values symbolic of increasing levels of corporatism, union density and wage centralisation. The lower values along this axis therefore depict increasing decentralization and wage-making flexibility, with wage setting determined at the firm level. Using this principal component, we can assess the level of centralized/corporatist versus decentralisation of varied industrial relations institutions. The third factor characterises the extent to which there is an active prevalence of labour market policy, with high public expenditures of a range of labour market areas on the positive pole. Therefore, the factor is named ‘labour market policy’, with higher factor scores representing the extent to which countries are committed to intervening in domestic labour markets (as averaged over the past 5 years). Again, institutional diversity with respect to labour markets can be assessed by their factor scores along the factorial planes defined by the 3 components above.

5.2.3 Education System

The principal components analysis derived 3 factors from a total of 9 manifest indicators as shown by Table 5.3. The first factor, with high loadings of expenditures on R&D and the percentage of tertiary educated labour, arguably represents ‘government support for research and formal education’. The structure of educational expenditures is, particularly in relation to R&D, a commonly used measure to gauge the depth of institutional educational support. The second factor symbolises the institutionalised skill regime; high or low human asset specificity, general or specialised skill profiles. Again, this follows other studies by measuring the institutional support for vocational

Table 5.3 PCA Component Matrix: Education System

	Component			
	(1)	(2)	(3)	
		‘Govt. Support for Research & Formal Education’	‘Institutionalised Skill Regime’	‘Absorption of Secondary Educated Labour’
Gross Domestic Expenditure on R&D	0.921			
Publicly Financed R&D	0.916			
% of Labour Force with Tertiary Level as Highest Level of Education	0.629			
Expenditure on Primary Education as a % of Government Expenditure on Education		0.884		
Expenditure on Secondary Education as a % of Government Expenditure on Education		-0.807		
Share of Population by Education Attainment: Upper Secondary & Post-Secondary non-tertiary – <u>General Education</u>		0.690		
Share of Population by Education Attainment: Upper Secondary & Post-Secondary non-tertiary – <u>Vocational Training</u>		-0.445	0.776	
% of Labour Force with Secondary Education as Highest Level of Education			0.880	
Unemployment Rates by Educational Attainment – Upper Secondary & Post-Secondary non-tertiary Education			-0.577	
Eigenvalue	3.081	2.207	1.212	
Variance Explained (%)	²	72%	²	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO)	²	0.576	²	
Bartlett’s Test of Sphericity ¹ (x^2)	²	0.000***	²	

¹ $p < 0.001$ ***; ² All components were from the same PCA iteration therefore share the same variance explained, KMO and x^2 ; Extraction method: Principal Components Analysis (PCA); Rotation Method: Orthogonal Varimax

or general (tertiary) education. However, this study provides a varied method of measurement through the use of factor analysis contrasting the common single indicator approach. Expenditures on secondary education and share of population with vocational secondary training (negative pole) contrast indicators of high share of population with general education and expenditures on primary level education (positive pole). This suggests a spectrum from the institutionalisation of vocational (specific asset specificity) training to the institutionalisation of general (low asset specificity) education. High asset specificity countries such as Germany and Austria face general asset specificity countries of the USA and Canada. The third factor provides a unique institutional perspective highlighting the ‘absorption of secondary educated labour’. High unemployment rates in labour with upper secondary and post-secondary education as their highest educational attainment (negative pole) contrasts indicators of ‘share of population with upper secondary and post-secondary vocational training as highest attainment’ and % of labour force with secondary education as highest attainment level’ (positive pole). Higher values would suggest lower unemployment in secondary educated labour and high levels of vocationally trained citizens. This dichotomy provides a perspective on the relative importance and absorption of secondary educated (vocational) labour into the industrial base of the economy, and is an interesting indicator to assess the skill profile required by domestic labour markets. The composition of education systems can therefore be assessed by their factorial projection along these three components.

5.2.4 Financial System

Principal components analysis from 11 indicators develops 4 meaningful financial system factors with eigenvalues above 1. Table 5.4 documents the principal components results. The first factor can be understood as representing the ‘availability of varied forms of

capital' with high loadings of ease of access to loans (EOSL), availability of financial services (AVFS) to name two. This reflects the use of such indicators within the PCA work of Allen et al (2017). The second factor can be seen to measure the 'concentration of the banking system', with increasing concentration of such system on the positive pole. This dimension has never been included in comparative institutional work hereby providing oversight to the composition of banking systems. The third factor has stock market capitalisation, stock market total value trade to GDP, and pension fund assets to GDP on the positive side. This shows the relative importance of pension funds and stock markets, with the provision of capital and corporate control determined to a larger extent by market coordination. Therefore, following similar lines of various studies (e.g. Schneider & Paunescu, 2012; Schneider et al, 2010; Hall & Gingerich, 2009), one can describe this factor as representing the 'type of financial system', that is whether the system is market or bank-based, centralised or decentralised. The fourth factor displays opposition between the H-statistic (negative pole) and Lerner Index (positive pole) which are widely used measures to assess the degree of competition/market power in the banking system. The higher the Lerner index illustrates increasing market power in the banking system and therefore transitioning towards a monopoly based industry structure. In contrast, higher scores of the H-statistic demonstrate increasing competition, hereby moving more towards perfect competition market structures. The inverse loading of these two similar indicators suggests that the factor represents the 'competition of the banking system'. How countries differ with respect to financial system institutions can be assessed by their factor score projections on the four planes defined by the principal components above.

Table 5.5 Overview of Factors

Institutional Sub-Sphere	Factor Component
Labour Markets	Labour Market Flexibility
	Wage Bargaining System
	Labour Market Policy
Product Markets	Governance of Internal Product Market
	Public Involvement in Domestic Product Market
	Explicit Protection against Foreign Competition
Education System	Govt. Support for Research & Formal Education
	Institutionalised Skill Regime*
	Absorption of Secondary Educated Labour
Financial System	Availability of Varied Forms of Capital*
	Concentration of Banking System
	Type of Financial System*
	Competition in Banking System

*Factors were reversed to represent the correct axis of coordination

5.3 Overview of Institutional Factors

Overall, this study has developed 13 institutional factors, underpinned by 42 manifest variables. Specifically, three factors are developed for the labour market, product market and education system, whilst four factors for the financial system. An overview of the institutional factors is given by Table 5.5.

These institutional factors form the basis of the cluster analysis and form the 'measures' that capture institutional diversity amongst the county sample. Factor

components marked by ‘*’ were reversed for purposes of interpretability (so they convey the balance between market and non-market coordination represented by other factors). Then through mathematical treatment highlighted by Equation 4.1, these factors are converted into coordination indices for country i which both increases interpretability and supports the study in measuring the format of ‘institutional complementarity’. These indices are then carried forward to specify several panel models and robustness checks in Step 2 of the research design.

5.4 Diversity of Economic Models

The following sections will outline and specify the results of the cluster analysis. It begins with an descriptive illustration of the cluster analysis, leading through into the empirical results, which are then explained and framed accordingly. The aim of this section is to underpin an objective contextual taxonomy of institutions and the pertaining diversities of institutional systems. It therefore operates in such a way as to provide illustrative context to institutional diversity and facilitates discussions on the spectrum of institutional variance. These modes of capitalism constitute an important benchmark for understanding the effect of institutions on entrepreneurship. Identifying and appreciating the impact of institutions on entrepreneurship requires a better understanding within the varieties of capitalism and the forms of institutional complementarities within which define them. After-all, clustering is "more than a methodological device; it is a vital tool for theory development... setting a foundation for sense-making, reasoning, and conceptualisation" (Ronen & Shenkar, 2013, p. 869).

5.4.1 Cluster Analysis Descriptives

In order to classify countries along each of the institutional components, this study uses the Anderson-Rubin method to produce standardised composite factor scores for each country. This ‘marks’ each country along the plane of a given institutional component. It is the variance along each of the 13 components that provides the basis for comparing countries with one another, allowing typologies to be created through analysing the variance within and between countries institutional projections. Classifications of countries are established using hierarchically ascending classification techniques (hierarchical cluster analysis). The rationale behind hierarchical cluster analysis is to group similar countries as measured by their Anderson-Rubin factor scores along each component. As such, cluster analysis is performed based on the previous principal components analysis. This allows the study to capture institutional diversity amongst the country sample by assessing institutional similarities and dissimilarities simultaneously. Specifically, this study takes the interval mode of Squared Euclidean distance; dissimilarity is defined as the Euclidean metric between N cases. The ‘Ward’s Method’, a step-by-step aggregation of countries by cluster is employed as so that the intra-cluster inertia has minimal variance.

However, hierarchical cluster analysis is primarily an exploratory rather than confirmatory or inferential activity. There are many attributes on which to measure similarity and difference across objects, and numerous algorithms for identifying clusters given some set of attributes. There is no statistical basis on which to prefer a particular clustering solution over another and no possibility of evaluating the uncertainty around a particular observation’s assignment to a given cluster. The choice of both the number of clusters to focus on and the substantive interpretations assigned to them is solely the responsibility of the researcher (Ahlquist & Breunig, 2016). Referring to the

traditional clustering methods, Venables and Ripley (2002) argue that “there are many different clustering methods, often giving different answers, and so the danger of over-interpretation is high”. As argued by Ahlquist & Breunig (2016), it is up to the researcher to identify, justify, and interpret a given cluster solution. As argued by in Obinger & Wagcshal (2001) and Saint-Arnaud & Bernard (2003) who relied on hierarchical clustering, their dendrogram can plausibly yield a two-, five- or six-cluster solution and as such it is within the researchers remit to interpret and identify ‘where to cut the dendrogram’.

However, this said, it is necessary to assess the clustering tendency and robustness to validate the quality of results after the hierarchical cluster analysis. A variety of measures has been proposed for evaluating clustering results, through clustering validation techniques. The term clustering validation is used to design the procedure of evaluating the results of a clustering algorithm, evaluating the clustering structure by varying different parameter values for the same algorithm (Theodoridis & Koutroubas, 2008).

In a bid to determine the optimal number of clusters, this study used a clustering validation technique via the Elbow Method (Zhao, 2012). Given this study statistically defines a cluster such that the total intra-cluster variation is minimised, the Elbow method looks at the total within-cluster sum of squares as a function of the number of clusters, as such that the marginal impact of an extra added cluster becomes zero or negative (i.e. it bends like an elbow), hence optimum number of clusters given. The Elbow method yields an optimum number of clusters which the study takes forward.

Fig. 5.1 Diversity of Economic Models: Dendrogram

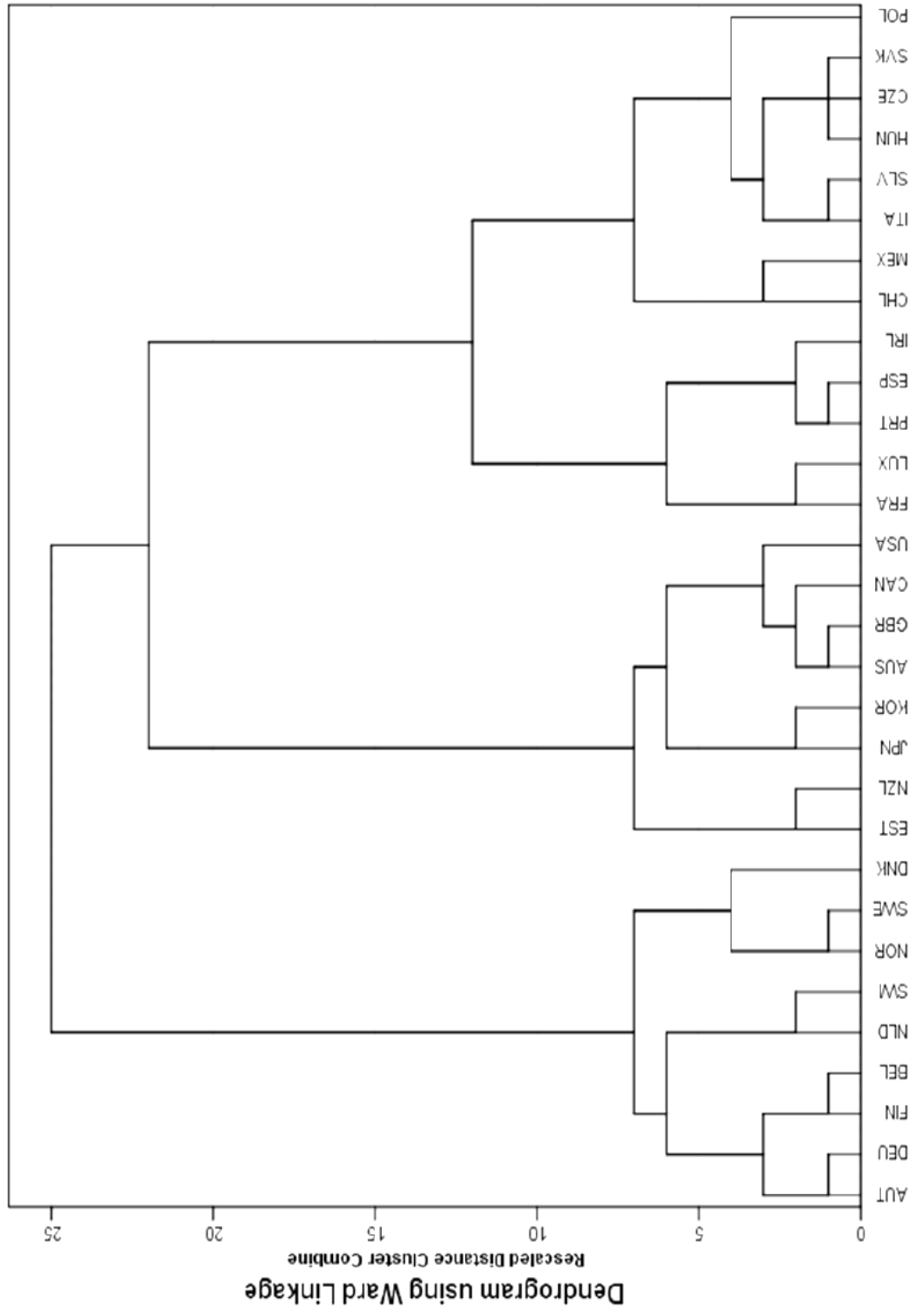


Figure 5.1 and Table 5.6 represent the results of the hierarchical cluster analysis (Figure B.5 - Proximity Matrix). Figure 5.1 shows the clusters through the use of a dendrogram or ‘hierarchical tree’. Figure 5.1 provides a useful tool to qualitatively assess potential cluster memberships where increasing dissimilarity of clusters (Y-Axis) provides natural ‘splits’ between countries and clusters. The lengths of the vertical lines linking clusters show how dissimilar the merged clusters are, and therefore lengthier lines show greater dissimilarity.

5.4.2 Four Modes & Nine Intra-Modes of Capitalism

When applying Ward’s Method hierarchical cluster analysis which in turn is validated by the Elbow method, optimally, 4 clusters emerge from the sample of 30 countries. These are formalised and depicted within the dendrogram of Figure 5.1. The results show wide variance of cluster classification, representative of the present capitalist institutional diversity posed by the current landscape of political economies. Whilst some country clusters echo the standard dichotomy of liberal market economies (LMEs) versus coordinated market economies (CMEs), various interesting cases prevail, particularly in relation to the inclusion of countries that had largely been ignored in previous studies.

Descriptively, the results show two varied ‘tiers of diversity’, that display ‘clusters *within* clusters’, or ‘diversities *within* diversity’. Firstly, there is diversity amongst countries in terms of their coordination mechanism (4 clusters), and secondly yet descriptively, diversity within each mechanism of coordination (9 clusters). The former can be argued to depict the ‘mode of capitalism’, and the latter displaying the ‘intra-modes of capitalism’. These will be outlined as follows.

Table 5.6 Cluster Classifications

Tier	Cluster	Country
<i>Mode of Capitalism:</i>	<i>Market Based Capitalism</i>	
<i>Intra-Mode of Capitalism:</i>	Neoliberal Market	United States Great Britain Canada Australia
	Emergent Market Capitalism	Estonia New Zealand
	Asian Market Capitalism	South Korea Japan
<i>Mode of Capitalism:</i>	<i>Coordination Based Capitalism</i>	
<i>Intra-Mode of Capitalism:</i>	Scandinavian	Denmark Sweden Norway
	Continental	Austria Belgium Switzerland Germany Netherlands Finland
<i>Mode of Capitalism:</i>	<i>Peripheral Capitalism</i>	
<i>Intra-Mode of Capitalism:</i>	Franco-Lux	Luxembourg France
	EMU Peripherals	Spain Portugal Ireland
<i>Mode of Capitalism:</i>	<i>Developmental Capitalism</i>	
<i>Intra-Mode of Capitalism:</i>	South American Variant	Chile Mexico
	Eastern European Variant	Hungary Slovakia Czech Republic Poland Slovenia Italy

First, natural ‘splits’ and ‘divisions’ emerge from a qualitative assessment of the dendrogram (Figure 5.1). Specifically, the results demonstrate 4 higher order divisions/clusters of countries to which can be described as representing the varied coordination mechanisms within capitalist regimes, that is, how actors are coordinated and informational problems are overcome (Hall & Soskice, 2001). These include market-based coordination (hereafter market based capitalism), coordination based capitalism (based on strategic coordination) and two variants of state-led coordination, which highlight two varying degrees of statist influence. Through observation of the dendrogram (Figure 5.1) these are represented by ‘long isolated branches’, namely high scores of rescaled Ward’s distance scores and thus cluster dissimilarity. The first (coordinated capitalism) can be identified from Austria to Denmark), with the market based capitalist regimes starting from Estonia to USA. Furthermore, of the two variants of state-led coordination regimes, the first starts from France to Ireland and the rest thereafter. As such, these can be described as tiers of comparative assessment as representing the ‘inter-variance’ between capitalism(s) as it embodies the diversity of coordination regimes between countries. Overall, these results suggest ‘diversities of the mode of capitalism’; market, strategically coordinated or state-led regimes.

Yet *within* each ‘inter-mode of capitalism’, diversity still remains. In fact, further divisions of countries emerge within each coordination regime to what can be understood to represent ‘intra-variance of capitalism’. Not all countries within a given mode of capitalism are the same, displaying unique internal variance inside each coordination regime. For example, within market based capitalism, large variance still remains between clusters on a basis of the composition of their financial system; some systems were characterised by dominant short-term capital vis-à-vis other long-termism regimes. Taxonomising the intra-variance tier of comparative analysis, 9 clusters can be inferred. Specifically, 3 variants of market based capitalism, 2 variants of coordination-based

capitalism, 2 variants of peripheral (state-led) capitalism, and 2 variants of developmentalist (state-led) capitalism. The naming of these clusters are indented to best represent the nature of diversity (particularly in relation to their coordination characteristics) and the geographic nature of the pertaining countries. These again are formalised by Table 5.6.

In sum, two tiers of capitalist diversity can be highlighted. Firstly, institutional diversity remains in terms of countries coordination mechanisms named ‘mode of capitalism’, which is the optimal number of clusters. The results suggest four variants. The second tier embodies ‘intra-variance’ within each capitalist regime, demonstrating internal variance within each mode of capitalism. The results show nine variants of capitalism. At a general level, these results reflect the reality that within national boundaries, institutions tend to ‘hang together’ as coherent entities or gestalts. The specific descriptives and characteristics of each mode of capitalism and their respective variants will be discussed below.

5.4.3 Institutional Cluster Descriptive Statistics

This section outlines objectively the descriptive statistics of the four cluster, highlighting where the diversity between the clusters and their institutional dimensions. Table 5.7 presents the mean Anderson-Rubin Factor score for each factor component grouped within each of the clusters. Descriptive statistics also document details on the variance and the significant differences between means, with respect to significant t-test values where compared vis-a-vis the market based capitalism cluster.

Inferentially, Table 5.7 echoes previous studies such as Dilli et al (2018) in that market and coordination based capitalism show high absolute loadings on their respective negative-positive poles, as to be expected. Peripheral and developmental capitalism clusters rarely have greater extreme values than market and coordination based clusters. The market based capitalism cluster stands out for extreme negative loadings. For example, this shows extremely liberal product markets, labour markets and financial systems. High degrees of labour market flexibility, a decentralised wage bargaining system and inactive labour market policies define the clusters liberal nature. The institutional characteristics of coordination based capitalism are more egalitarian. In particular, high positive means in terms of centralised wage bargaining and active labour market policy represents the coordination complementarity sets referred to by Hall & Soskice (2001) for example. Meanwhile, the peripheral and developmentalist capitalism clusters are generally mixed and hybrid in the sense they do not tend to one extreme of the negative-positive axis poles ($\mu \approx 0$). They have neither, on average, purer movement to the market based or coordination based complementarities. They have partial decentralised wage bargaining institutions yet rigid labour market flexibility. Couple this with high regulation in product markets, neither a market or stakeholder type of financial system and constraining capital lines yields two clusters of capitalism that, according to the criteria of Kenworthy (2006), would be incoherent in nature. The next section will further discuss the features of the clusters and how fundamentally these clusters display architectural diversity.

5.4.4 Institutional Cluster Configurations & Features

This section outlines descriptively the configurational features of each mode of capitalism and those intra-modes of capitalism within. These descriptions are born from a

Table 5.7 Cluster Anderson-Rubin Factor Score Means

<i>Factor Component</i>	Cluster of Capitalism			
	Peripheral Capitalism	Market Based Capitalism	Coordination Based Capitalism	Developmental Capitalism
Govt. of Internal PM	0.23	-1.36	-0.04	0.32
Pub. Involv. in Domestic PM	0.25	-1.52	-0.23	0.47
Protection against Foreign Comp	0.12	-1.02	-0.02	0.14
Labour Market Flexibility	0.92	-1.24	0.12	0.42
Wage Bargaining System	-0.48	-0.56	1.23	-0.46
Labour Market Policy	0.31	-0.52	1.36	-0.63
Support of Research & Formal Education	-0.09	0.51	0.98	-1.01
Institutionalised Skill Regime	0.43	-0.64	1.01	0.01
Absorption of Secondary Educ Labour	-1.21	0.02	0.98	1.12
Availability of Varied Capital Forms	0.12	-0.59	0.04	0.61
Concentration of Banking System	-0.41	-0.52	0.62	-0.09
Type of Financial System	0.01	-0.65	0.24	0.14
Competition in Banking System	0.13	-0.74	0.45	0.42
Mean	0.025	-0.68	0.59	0.112
Median	0.12	-0.64	0.45	0.14
Standard Deviation	0.512	0.546	0.542	0.564
Kurtosis	2.30	0.816	-1.55	0.34
Skewness	-0.93	0.55	0.203	-0.48
Sum	0.33	-8.83	6.74	1.46
<i>t</i> -Test ¹	-2.70***		-10.29***	-3.08***
<i>IC_i</i>	0.51	0.12	0.94	0.6

Anderson-Rub Factor score means are presented for each component (row) within each cluster (column) before normalisation; IC_i mean given after transformation via Equation 4.2; Factor score means after the reversal of axis outlined in Table 5.5; ¹ 't-stat' presented at $p < 0.001$ ***, comparison against the market based capitalism mean.

quantitative assessment (Table 5.7) of where each cluster average ‘sits’ along their institutional planes.

Market Based Coordination: *Neo-Liberal, Emergent Market & Asian Capitalism*

Overall, market based capitalism is based on market relations, defined by a largely liberal agenda towards the allocation of actors via market relation. This is akin to the liberal market economies (LMEs) as characterised by the seminal work of Hall & Soskice (2001). This studies results show uniformly that these institutional configurations are branded by decentralised wage bargaining systems, high labour flexibility and low labour market spending. Furthermore, the education systems institutionalise general skill profiles hereby weak asset specificities, coupled with weak governance measures for domestic product markets. Financial systems are generally competitive in structure, and Governments provide relative support formal education and research. However, as 3 clusters emerge within such market-based system, internal diversity subtly remains. This can be underpinned by further exploration of each market cluster namely, neo-liberal, emergent market and Asian capitalism.

Neo-liberal capitalist variant is the most extreme version of market-based capitalism signifying pure forms of individualist and liberal ideologies. This cluster is represented by the USA, UK, Canada and Australia, countries signifying the Anglo-Saxon unfettered principles. Whilst still embodying the characteristics above, this cluster is significantly dominated by their financial systems; heterogeneity is most apparent within such institutional sphere. There remains a relative high degree of pension funds and stock market activity that underpins the allocation of (short-term) capital. That

is, market relations fundamentally determine issues of finance and corporate control. These systems can thus be characterised as portfolio orientated systems (Berglof, 1997), outsider systems (Franks & Mayer, 1997) and ultimately market-based financial systems. Neo-liberal capitalists also tend to display low levels of banking system concentration and high levels of capital availability relative to its neighbouring market clusters.

Emergent market based capitalists, as represented by Estonia and New Zealand, displays similar structural patterns as neo-liberals, especially in terms of the system of industrial relations and employment protection. This could be seen to symbolize countries in transition towards pure neo-liberals. There is growing acknowledgement that Estonia has undertaken a transitional path symbolised by marketisation and liberalisation, a concerted attempt to emulate the institutional architecture of the UK and USA (Feldmann, 2006; 2013). Again, heterogeneity remains particularly in relation to the financial systems. Whereas neo-liberal financial systems are based on short-term market capital, our results suggest emergent liberals pose a financial system based on patient capital and insider 'bank' relationships. This could represent the underdevelopment of capital markets in such economies and the high concentration of banks relative to neo-liberal models. Furthermore, emergent liberal Governments provide less public support for research and formal education.

Asian market capitalism as named after the geographic proximity of the two clustered countries, South Korea and Japan, whilst true to the liberal market core, provides variety on several fronts. Asian market capitalism can be characterised by a similar financial system architecture to neo-liberal capitalism with short-termism market based behaviours and relative low concentration of the banking system. However, such model can be characterised by higher levels of external orientated regulation on product markets, barriers to trade and FDI vis-à-vis those of neo-liberal and emergent market

clusters. According to this taxonomy, Asian market capitalists tend to provide more Government support for research and formal education whilst still prevailing with the institutionalisation of general skill profiles.

Coordination Based Capitalism: *the Scandinavian & the Continental Variant*

Coordinated markets provide a direct contrast to the institutional configuration of market based capitalist countries. Agents are allocated via non-market relationships and collaborative strategic interactions between firms and other market actors, analogous to the coordinated market economy (CMEs) classification of Hall & Soskice (2001). Coordination is secured by strategic interaction with institutions constructed to allow such mechanism to lessen uncertainty. The principal supporting institutions allowing strategic coordination is that of the labour market, assembled around the prevalent role of corporatism and unionisation. The industrial relations system is centralised allowing for the ‘perverse benefits’ of wage moderation (Hancke, 2013; Calmors & Driffill, 1988; Carlin, 2012) parallel to a relatively rigid labour markets that nurtures the industrial base of said countries. This is supported by the institutionalisation of high human skill asset specificity as developed by the prevalence of ‘on-the-job’ and vocational training underpinned by a bank based financial system providing ‘patient long term capital’. Consistent with market based systems, domestic product markets are de-regulated and free of Government distortions. The results suggest two variants of coordination based systems, the Continental model and Scandinavian model. Whilst consistent in institutions logics characterising strategic coordination, these two models have subtle variety.

The Scandinavian variant focussed on Denmark, Sweden and Norway, whilst consistent with the traditional characteristics above, also displays significant variety from its neighbouring cluster on the basis of its banking system market power. Whilst both financial systems are based around an ‘insider system’, the results suggest that the Scandinavian model of the banking system is far less competitive as measured by the principal component (Financial System - Component 4, Table 5.4). There is significantly higher market power within such system, suggesting the nearness towards a monopoly based banking structure. This contrasts the Continental variant, again named after the geographic proximity of the clustered countries, which is symbolised by high levels of competition. One can denote that this system is nearing a perfect competition structure.

Peripheral Capitalism: *Franco-Lux & EMU peripherals*

Peripheral capitalism, comprising of two variants, is largely defined by a relative degree of state influence. Where market and strategic coordination underpin the allocation of actors in former cases, it is the state that overcomes weak institutional calibration by providing the correction of coordination failures. Such state activity is therefore a process of non-market coordination displayed by the course of large state dependence (Molina & Rhodes, 2007). The mixed, state and market interaction is thus the dominant form of coordination, with a higher impact of regulation and state mediation, which has been argued to perpetuate long-term inefficient equilibriums given the outcome of coordination between freely contracting actors will prove extremely difficult to build (Crouch, 2005b; Molina & Rhodes, 2007).

State activity is dominant within domestic product markets. The results suggest that product markets within this mode of capitalism are defined by high levels of governance measures and public involvement as expressed by our factor components. This has significant negative impact for accumulative adjustment under the EMU (Pelkmans et al, 2008). However, these countries are also characterised by low external protection against foreign investment, perhaps emblematic of the membership of the European Single Market. There remains very high levels of labour protection hereby acknowledged as rigid markets, coupled with intermediate forms of wage-bargaining throughout each intra-variant of capitalism. Again, this has significant repercussions for the competitiveness and shock absorption within such countries (Hancke & Herrmann, 2007). Intermediate forms of active labour market policy and the institutionalisation of high asset skill specificity are complemented by a ‘patient capital’ bank based financial system. But again, multiplicity remains between the two intra-variants.

Franco-Lux, as named from the inclusion of France and Luxembourg is characterised by higher average spending on R&D and formal education versus the EMU-peripheral model, alongside relatively higher rates of secondary educated labour absorption. The EMU variant, labelled by the commonalities between countries, is symbolised by extremely low levels of secondary educated absorption, arguably led by the significant fall in aggregate derived demand within each economy (Rhodes, 2014). Low levels of capital availability contrasts high degrees of capital provision within the Franco-Lux model, feasibly representative of the collapse in the financial systems as buttressed by the present dysfunctional nature of the Eurozone (Nolke, 2016).

Developmentalist Capitalism: *the South American & the Eastern European Variant*

Similar to the peripheral mode of capitalism, the mixed interaction of state and market is the dominant form of coordination in light of the weak ‘coherence’ of institutions (Kenworthy, 2006; Hall & Gingerich, 2009). We name this cluster developmentalist capitalism to capture the perceived ‘nurturing’ element of state influences within developing countries (except Italy). With two variants of capitalism, South American and Eastern European, sharing of common institutional logics remains. Labour markets are characterised by high levels of labour protection, inactive labour market policy and decentralised systems of industrial relations. Low concentration and competition of the banking systems coupled with more bank based financial relations is perhaps reprehension of underdeveloped financial systems; low levels of capital availability are identified. This has been argued to be the case in Central and Eastern European states (Nolke & Vliegenthart, 2009; Lane & Myant, 2007). Furthermore, high absorption of secondary educated labour and low levels of R&D/formal education funding combine with high product market governance measures, which is consistent with historical developmentalist trajectories of other countries (Deeg & Jackson, 2015; Pelkmans, 2010).

Variance between the South American and Eastern European variants remains on several fronts. The South American variant contrasts its neighbouring cluster with the high institutionalisation of general skill profiles (weak asset specificity) versus the Eastern European focus of high skill asset specificity. Coupled with low external product market protection, the Eastern European model arguably has institutional configurations permissible to the creation of industrial ‘legacies’ (Mykhnenko, 2007).

5.4.5 Institutional Complementarities

According to Amable (2016), the existence of institutional complementarities explains how varied institutional models of capitalist may exist. From these institutional complementarities perspective, if varied combinations of institutions yield equally efficient growth and welfare, then it is plausible that more than one model of capitalism will exist. Indeed, each variety of capitalism is built upon a unique institutional logic as developed from the nature of institutional complementarities.

As per the Hall & Soskice theories of varieties of capitalism, institutional complementarities explains the reinforcing mechanism that leads to the emergence of two differentiated coordination regimes, namely liberal market economies (LMEs) and coordinated market economies (CME). It is argued here that the results partially mirror the binary classification of these specific capitalist systems. Building on such work as Hall & Soskice (2001) and Amable (2003), this studies market based cluster and coordinated market cluster posit theoretically ‘coherent’ models of capitalism. Hall & Soskice (2001), Hall & Gingerich (2009) and Kenworthy (2006) assert that institutional coherence, and thus effective coordination can exist in both coordinated led market economies and liberal market economies. This is due to the underlying institutional complementarities providing equally efficient economic returns and effective coordination of agents. As such, this section lends particular attention to the underlying forms of complementarity within these modes of capitalism.

Table 5.8 Complementarity Matrix - Market Based Capitalism

Institutional Sub-sphere	Product Markets	Labour Markets	Financial System	Education System
<i>Product Markets</i>	Marketised product & labour markets makes firms more receptive to supply & demand changes, and therefore the labour market should be able to absorb any adverse shocks via changes in the quantity of labour. Ease of hiring allows firms to increase labour quantity and overcome weak productivity which would otherwise be raised by capital investments	Low product market regulation allows marketised competition, generating de-facto demand for employment flexibility. Decentralised wage bargaining allows firms to compete on a cost basis as they have both wage sovereignty & control over labour shedding/recruitment	Liberal product markets tend to be associated with market based financial systems providing short-term capital. Competitive market pressure means firms want quick reacting and developed financial markets with an array of capital provision. Capital provision is allocated on a basis of ROI, complemented by the marketized competitive pressures of product markets which maximised potential ROI	Fast structural change requires a labour force with flexible skills. Non-interventionist education systems promotes the fluidity of product markets, who defines the requirements of labour. Education systems who would define the specificities of skills would cause mismatches between product markets and their requirements versus the present skill profile of human capital. General skill provision allows firms and higher education institutions the power to define the skill requirements of industries/firms
<i>Labour Markets</i>	Marketised product & labour markets makes firms more receptive to supply & demand changes, and therefore the labour market should be able to absorb any adverse shocks via changes in the quantity of labour. Ease of hiring allows firms to increase labour quantity and overcome weak productivity which would otherwise be raised by capital investments	Low product market regulation allows marketised competition, generating de-facto demand for employment flexibility. Decentralised wage bargaining allows firms to compete on a cost basis as they have both wage sovereignty & control over labour shedding/recruitment	Liberal product markets tend to be associated with market based financial systems providing short-term capital. Competitive market pressure means firms want quick reacting and developed financial markets with an array of capital provision. Capital provision is allocated on a basis of ROI, complemented by the marketized competitive pressures of product markets which maximised potential ROI	Fast structural change requires a labour force with flexible skills. Non-interventionist education systems promotes the fluidity of product markets, who defines the requirements of labour. Education systems who would define the specificities of skills would cause mismatches between product markets and their requirements versus the present skill profile of human capital. General skill provision allows firms and higher education institutions the power to define the skill requirements of industries/firms
<i>Financial System</i>	Creates more of an interaction via marginal effects of profitability of product markets (Amable, 2013). Sophisticated and well developed financial systems enable quick reaction to markets and favour industrial dynamism. Promote the strategies of business to maintain constant profit gains	Short-termism constraints in the form of profitability prevent the establishment of rising forms of labour rigidity. Profit pressures place strains on cost control, complemented by the decentralised nature of industrial relations; firms select specific wages. Costs can be further reduced by the ease of firing and use of temporary contracts	Flexible labour markets and decentralised wage bargaining allows quick adjustments via labour and therefore maintenance of short-term profits as demanded by financial stakeholders. Non-interventionist labour market policy allows labour provision to be decided by market allocation (profits maximisation)	Fluid labour protection and decentralised industrial relations promote structural change which further incentives the investments in general skills. Interventionist education systems would contradict labour markets as these investments cannot be safeguarded by wage coordination. This would lead to skills atrophy in times of labour shedding, which lubricates the structural adjustment of such models. Investments in R&D allow a vital source of endogenous change where labour clears on nominal rigidities
<i>Education System</i>	The creation of general skills allows adaptability within the product markets. The dominance of general skill specificities favours structural change, as the lack of product market regulation is aimed at promoting the economic efficiencies of internal and external market competition	General skill specificities hence no hold-up problem, therefore less need for wage centralisation and employment protection. Fluid labour increases the potential for sectors being built upon genuine economic progress, which then specifies which skills are needed. Market determined skill investments. Firms do not wish to attain employees of high asset specificities as this can increase transaction costs; employees can demand higher wages. Labour would be in a stronger position, as reflected in the fact that skilled unique labour is harder to replace	Investments in formal education and R&D are complemented by market based capital provision. Shareholders protection over stakeholders, hence low incentives to invest in specific skills. Providers, such as higher education institutions, require a fluid source of capital to support their investments in labour with low asset specificities	Prevalence of shareholders over stakeholders, hence high incentive to invest in generalisable skills which maximise returns to shareholders. General skill specificities promotes the radical spurious nature of innovation which supports financial systems based on venture creation and merchant activities

Table 5.9 Complementarity Matrix - Coordination Based Capitalism

	Product Markets	Labour Markets	Financial System	Education System
<i>Institutional Sub-sphere</i>				
<i>Product Markets</i>	Employment protection prevents fast structural change. Moderate internal competitive pressures enables a relatively high degree of employment protection but depends important productivity gains. This is enabled by centralised wage bargaining and the insurance of investments in specific skill profiles. This centralisation of wage bargaining and corporatism favour coordination among firms	Firms long term strategies requires patient capital, and thus patient capital supports long-term strategies. Semi-protected product markets means that financial systems do not have to be fully reactive to business cycle forecasting and thus support a deeper industrial base allowing the absorption of educated labour.	Quality-based competition demands a workforce less susceptible to business cycle volatility, thus slow structural change that favour the acquisition of specialised skills. Labour force with specialised skills allows stable industrial strategies, built upon patient capital, to be followed	
<i>Labour Markets</i>	A coordinated and protected labour market allows solidaristic wage setting which favours innovation and productivity. Creates less concern with profit motives but more with quality changes. Labour is less of a macroeconomic adjustment mechanism. Moderate internal competitive pressure enables a relatively high degree of employment protection, but external pressure demands important productivity gains	Employment protection limits the need for a strict short-term profit constraint based on return on investments and equity release. As such, a lack of short term constraints enables employment stability. Where cost pressures are enacted, then firms can adjust labour downwards with an aggregate change in real wages through the mechanisms of centralised wage bargaining. This further allows authorities to use active labour market policies (ALMPs) given the assurance given from stakeholders. Low concentration of the banking system means that patient capital is sustainable and encouraged	Employment protection is an incentive to invest in a skill profile commensurate to long-term strategies as enabled by labour protection and a patient financial system. Weak individual risk-diversification possibilities, thus requirements for employment protection and centralised union powers. Thus, high demand for specific skills protection.	Requirements for capital marked by long termism is underpinned by a workforce and skill profile not commensurate to fluid structural change. Return on investments therefore can be reaped over a longer time horizon given industries remain relatively stable and protected against output gaps in the macroeconomy.
<i>Financial System</i>	Structured product markets based on subtly governmental regulation and control can support industries with the use of patient, long-termism capital. Firms are less concerned with shareholder value but rather stakeholder value as product markets are conducive to an 'insider' system. Use of long term capital leaves product markets susceptible to the impact business cycles have on cost competitive-ness suggestive of more prevalence on non-price coordination. Moderate competitive pressure allows the establishment of stable finance-industry relations	Little short term constraints enables employment protection. Likewise, employment protection calls for the absence of short-term constraints by favouring patient long term capital investments. Returns to long term capital are enabled by control over wage bargaining, thus competitiveness and the real exchange rate (in those under a single currency)	Active labour market policies (ALMPs) are financially and assured for the development of a skill profile marked by high asset specificity. Again, low concentration of the banking system means that 'shareholder' value encourages the development of assets in the form of invested labour and their training. High public expenditure on secondary & tertiary education as a means to further support the development of an 'industrial base' through investments in labour	
<i>Education System</i>	Quality-based competition demands a workforce with a high level of general education, slow structural change favours the acquisition of specialised skills. Foreign competitiveness requires a highly skilled workforce. Efficient corporate training requires a good level of secondary education	Competitive pressure and employment protection call for some adaptability of skills, need for constant retraining, centralisation and coordination favour the definition of useful, identified, specific skills. Thus demand for specific skill protection in terms of employment protection and wage centralisation		

Tables 5.8 & 5.9 outlines the theorised interaction between institutional sub-spheres in the market based and coordinated based capitalism clusters. Both liberal market based models and coordinated market based models are seen to be theoretically coherent and stable forms of capitalism (Hall & Gingerich, 2009) and as such it is important to outline the underlying structures forming these capitalism models. This is based on the assessment of the average factor scores of each cluster and dimensions of such analysis.

In the market based mode of capitalism, low product-market regulation exposes firms to increasing competition, making them more sensitive to adverse market shocks. Flexible labour markets and decentralised wage bargaining systems allow firms to both alter their prices, but also adjust their quantity of labour in the event of adverse changes in the market dynamics. Liberal product markets are therefore complemented by a labour market which provides the ease of flexible adjustment. This has been empirically validated by Amable (2016). In addition, financial systems dominated by short term capital aimed at seeking immediate financial returns make firms adjust their strategies accordingly. Firms are exposed to a pure profit maximisation motive, which is supported by allowing managers to control costs, particularly through labour market adjustment. This economic model consequently favours fast adjustment, rapid structural change and entails a high degree of risk for the investment in specific skills. For this reason, the education system complements its neighbouring institutions by investing in general skills. This is complementarity for two reasons. Firstly, general skill profiles dampen economic downturns as they support firms in adapting to a new market paradigm. Secondly, individuals with general skills have reduced bargaining power relative to specific skill profiles, which underpins the control of firm based costs (Soskice, 1990; Estevez-Abe, Iversen & Soskice, 2001).

The coordinated mode of capitalism is organised per a different set of complementarities. Semi-governed and protected product markets implies some flexibility of the productive system, which is not only achieved through labour market shedding and market adjustments as exercised in the market based model. Instead, retraining of a highly skilled workforce in a market reinforcing manner plays an imperative role in the adaptability of firms to competitive pressures. Training labour with the institutionalisation of specific skills is supported by a combination of high employment protection, centralised wage bargaining and active labour market policies. This array of 'insurance' based institutions complements the investment and sunk costs towards the creation of skill specific assets. The financial system further complements the rest of the production regime by providing patient led capital. This enables firms to develop long-term strategies in the absence of being exposed to short-term profit constraints.

These modes of capitalism constitute an important benchmark for understanding the effect of institutions on entrepreneurship. Identifying and appreciating the impact of institutions on entrepreneurship requires a better understanding within the varieties of capitalism and the forms of institutional complementarities within which define them. Research into the effect of institutions should take note of the overall mode of institutional configuration and move beyond institutional research based on single institutions in isolation (Stephan et al, 2015; Syliowicz & Galvin, 2010). The institutional environment, dominated by a matrix of complementing institutional sub-spheres, give rise to specific forms of incentive and entrepreneurial endowments. It is a result of this that entrepreneurs are provided with unique forms of institutional logic under varied models of capitalism. Institutional diversities, institutional coherence and institutional complementarities, key theoretical tenants of the comparative institutionalism literature, can provide fruitful insight for the study of international comparative entrepreneurship.

5.4.6 Coherent & Incoherent Models of Capitalism

A political economies institutional configuration is deemed more coherent and more coordinated to the degree to which (i) its institutions within each sphere are closer to the polar types of a coordinated mode of capitalism or market based mode of capitalism. This is in contrast to being ‘in-between’ these two types. Secondly (ii) its institutions are consistent across all institutional sub-spheres, that is, having no competing institutional logics. Incoherence is therefore defined as neither matching closely the two modes of capitalism, or having liberal orientated institutions in some sub-spheres yet coordinated led institutions in neighbouring sub-spheres. This would lead to a situation where institutional complementarities cannot be maintained.

Table 5.10 contains a schematic presentation of the differences in institutional logics and complementarities between this works coherent and incoherent models. It further demonstrates the link between the institutional coherence hypothesis, the modes of capitalism illustrated by this research and how this matches with the current body of work in comparative institutionalism.

As discussed beforehand, there are several precedents in the comparative political economy literature for the notion that coherence affects national economic performance. Greater institutional coherence increases the benefits from institutional complementarities, increasing the agents ability to exploit the benefits yielded by the complementarities (Hopner, 2005). Coherence allows firms to coordinate effectively given the complementarities do not exhibit inconsistencies or contradictions in their institutional logics - the ‘system integration’ - of the national models of embedded capitalism will be continuously established, restored, redefined and defended against all sorts of disorganizing forces (Streeck, 2001).

Table 5.10 Coherent versus Incoherent Models

	Coherent Models; High Institutional Calibration		Incoherent Cases
<i>Mode of Capitalism</i>	Market Based Capitalism	Coordination Based Capitalism	Peripheral & Developmental Capitalism
<i>Akin to...</i>	Liberal Market Economy (LME)	Coordinated Market Economy (CME)	Transitional & Hybrid Capitalism
<i>Dominant Form of Coordination amongst Micro-Interactions</i>	Markets; Arms-Length Interactions	Autonomous Coordination	Mixed/Hybrid forms and/of underdeveloped forms of coordination
<i>Sources of Complementarities</i>	Market-induced coherence across policy arenas catalysed by pressures to maintain consistencies with liberal reform in spheres of the production regime	Bottom-up induced catalysed by pressure to maintain consistencies with non-liberal reform in spheres of the production regime	State regulatory changes aimed at correcting coordination failures maybe dysfunctional (Molina & Rhodes, 2007). Potential sclerosis via long term inefficiencies and institutional inertia with further complementarities very hard to build. 'Non-complementarity'
<i>Re-enforcing Mechanism of Stability</i>	High penetration of policy-making by exogenous economic forces (Soskice, 2007)	High permeability of political systems to domestic coalitions	Gate-keeping role of the state; veto power of domestic actors
<i>Time Horizons & Adjustments</i>	Short-term and rapid adjustments	Long-term and strategic incremental adjustments	State regulation may perpetuate long-term inefficient equilibriums
<i>Role of State in the Production Regime</i>	Minimum state: underpins the functioning of the market with forms of legal & regulatory cover	Enabling: Protects collective goods & intervenes in human capital via labour and education systems	Pervasive state: direct production and regulation & correction of coordination failures derived from institutional incoherence
<i>Stable Equilibria?</i>	Stable as converging on market based complementarity	Stable as converging on coordination based complementarity	Unstable as without coherent forms of complementarity, where the state takes an active role in overcoming weak institutional links
<i>Institutional Coherence</i>	Theoretical coherence and institutional consistencies	Theoretical coherence and institutional consistencies	Incoherent and Institutional Inconsistencies
<i>Institutional Complementarity Index 'Mean Score' (0-1)</i>	0.12	0.94	0.56

Institutions that are consistent across all institutional sub-spheres promotes stability (Amable, 2003), facilitates coherence which structures logical form, conventions and rules of the game that shape the logics governing economic decision. These established institutional structures explain the sources and variations of endowments enjoyed by entrepreneurs (Yueng, 2002). This in turn conditions the types, levels and quality of endowments from which entrepreneurs can exploit.

Added, a pervasive state which is a hallmark of incoherent models crowds out private enterprise (Baumol et al, 2007). Those countries which exhibit weak institutional calibration and institutional voids are those that can be defined as institutionally incoherent - those in-between types of capitalism which have a contradictory mix of liberal and coordinated institutions. Here, the state overcomes weak institutional calibration by providing the correction of coordination failures. This pervasive state activity is therefore a process of non-market coordination displayed by the course of large state dependence (Molina & Rhodes, 2007). Mixed state and market interaction is therefore the dominant form of coordination, with the interaction between freely contracting actors, such as entrepreneurs proving extremely difficult to build. This perpetuates long-term inefficient and unstable equilibriums which is in itself not conducive to general private entrepreneurial activity (Baumol et al, 2007). Baumol et al (2007) refers to these types of capitalism as "State-guided" and "Oligarchic"; "failing to create conditions for small-and-medium-sized business to flourish" (Baumol et al, 2007, pg. 76). Overall, one could hypothesise that institutional (in-)coherence is (bad) good for entrepreneurship, through two main channels, (1) greater logic *provision of endowments* and, (2) a *pervasive state* directs production, regulation and correction of coordination failures which derive from the institutional incoherence and their competing institutional logics.

5.5 Chapter Summary

The analyses performed in this chapter have led us to identify the main factors of differentiation of modern capitalist economies and the partitions they imply. Since systematic analyses are seldom performed for a larger basket of countries, the results presented in this chapter have shed some new light on the usual classifications of countries found in the literature. One could summarize the main findings in the following way. Most of the analyses lead us to refine the division of modern capitalism into CMEs and LMEs. Even when the picture seems relatively clear-cut, as is the case for product- and labour-market regulation, for instance, the existence of a relatively well-defined group of market-based economies does not imply that the economies of the other countries are organized according to one, opposed principle.

Chapter 6

Research Findings (2):

Institutional Diversity, Functional

Equivalence & Aggregate

Entrepreneurship - Multivariate

Panel Analysis

6.1 Introduction

Building upon the results of Chapter 5, this chapter presents the detailed empirical findings in relation to the research objectives. To introduce institutional diversity perspectives, this chapter provides quantitative results of the specified models accounting

for unique institutional diversity. This was done by specifying models with institutional complementarity terms which are analysed through multivariate panel analysis. This chapter starts with a recap of the hypotheses and subsequent econometric models. Lending from this, descriptive statistics are outlined followed by a set of diagnostic tests. Where estimation techniques are reinforced to control for certain econometric effects, the following section documents the estimation results. Given these results may depend on the inclusion of certain data sets and variables, the model estimates are then subjected to a range of robustness checks to further cross-validate the original panel findings. The chapter is then brought to a close by reflecting on the statistical significance of the hypotheses. This chapter addresses the following research questions:

Research Objective 2:

To ascertain the effects of institutional diversity on aggregate entrepreneurship.

Research Objective 3:

To ascertain whether perspectives from comparative institutionalism can explain the divergent nature of entrepreneurial activity across nations.

6.2 Hypothesis & Model Specification Summary

In total nine models are tested, consisting of four different specifications of the independent variables across two forms of estimation methods. For purposes of clarity, each model is outlined textually, where the algebraic expressions are given in Chapter 4.

Again, these are aiming to ascertain research objective two and three. The summary is given as:

Model 1 Overview: Baseline Model

Model 1a: Equation 1 with *control variables* only.

Model 2 Overview: Quadratic form (x^2) of singular institutional sub-spheres (IC_i)

Model 2a: Equation 2a with quadratic form (x^2) of PM_i coordination estimated through Pooled OLS

Model 2b: Equation 2b with quadratic form (x^2) of LM_i coordination estimated through Pooled OLS

Model 2c: Equation 2c with quadratic form (x^2) of ES_i coordination estimated through Pooled OLS

Model 2d: Equation 2d with quadratic form (x^2) of FS_i coordination estimated through Pooled OLS

Model 3 Overview: Linear parametric form of ‘Institutional Complementarity’ term intended to assess Hypothesis 1

Model 3a: Equation 3 with linear form of IC_i term estimated through Pooled OLS

Model 3b: Equation 3 with linear form of IC_i term estimated through GLS Random Effects

Model 4 Overview: Quadratic form (x^2) of 'Institutional Complementarity' term intended to assess Hypothesis 2

Model 4a: Equation 4 with quadratic form (x^2) of IC_i term estimated through Pooled OLS

Model 4b: Equation 4 with quadratic form (x^2) of IC_i term estimated through GLS Random Effects

6.3 Descriptive Statistics

Table 6.1 presents descriptive statistics for all variables, including the mean, standard deviation, minimum and maximum values. Variables were standardised, and institutional variables were further normalised to eliminate distortions from differences in numerical magnitudes. This has been the common treatment of variables in extant studies (e.g. Witt et al, 2018; Hall & Gingerich, 2009; Kenworthy, 2006).

Table 6.1 Summary Statistics

Variable	Mean	Stdev	Min	Max	Obs.	Time
Total Early Stage Entrepreneurial Activity (TEA)	8.276	4.223	2.35	26.83	174	2010-2015
Product Market Coordination (PM_i)	0.257	0.229	0.0018	1.00	174	2010-2015
Labour Market Coordination (LM_i)	0.307	0.226	0.0102	1.00	174	2010-2015
Financial Market Coordination (FS_i)	0.620	0.282	0.1518	1.00	174	2010-2015
Education System Coordination (ES_i)	0.523	0.240	0.0975	1.00	174	2010-2015
Institutional Complementarity (IC_i)	0.322	0.290	0.00	1.00	174	2010-2015
$LnGDP$ per capita	10.47	0.620	9.08	11.67	174	2010-2015
Unemployment Rate	8.15	4.181	3.1	26.3	174	2010-2015
Stock of Inward FDI	61.153	58.507	3.45	384.53	174	2010-2015
Dependency Ratio	49.68	5.366	36.95	64.466	174	2010-2015
Population Density	147.212	136.426	2.87	519.26	174	2010-2015

6.4 Validating the ‘Institutional Complementarity’ (IC_i) Measure

As outlined in Chapter 4, this study creates a weighted term IC_i to account for the *functional* (Boyer, 2005) ‘institutional complementarities’ of the institutions sub-spheres (Equation 4.2). This institutional complementarity term measures the balance of market and strategic coordination in the political economy for country i . The term is specified by the following summation:

$$IC_{it} = \left[\left[\sum_{j=1}^n x_{ji} \left[\sum_{j=1}^n \max(x_{ji}) \right]^{-1} \right]_P \right] \left[\left[\sum_{j=1}^n (x_{ji}) \left[\sum_{j=1}^n \max(x_{ji}) \right]^{-1} \right]_L \right] \left[\left[\sum_{j=1}^n x_{ji} \left[\sum_{j=1}^n \max(x_{ji}) \right]^{-1} \right]_F \right] \left[\left[\sum_{j=1}^n x_{ji} \left[\sum_{j=1}^n \max(x_{ji}) \right]^{-1} \right]_E \right] \quad (6.1)$$

Where $[\dots]_P$ is the product market coordination of country i , $[\dots]_L$ is the labour market coordination of country i , $[\dots]_E$ is education system coordination of country i and $[\dots]_F$ is the financial system coordination of country i specified by Equation 4.1.

To validate this measure of ‘institutional complementarity’, bivariate correlation is employed against the two measures developed and deployed by Hall & Gingerich (2009). Measuring the nature of institutional complementarity to estimate the relationship between varied forms of institutional coordination (market and strategic coordination based) and rates of economic growth, Hall & Gingerich (2009) provide a scholarly breakthrough in terms of measuring complementarity and the varieties of capitalism hypothesis. As such, a sizeable and significant correlation with the Hall and Gingerich

measures of institutional complementarities provides substantial validation to the claims that we are measuring a similar concept. This study employs a two-tailed bivariate correlation between this studies measure of complementarity and those of Hall & Gingerich (2009). Likewise, with this studies rationale, higher scores of coordination portray movement towards strategic coordination modes, and therefore one should expect to see a positive correlation. The results are given by Table 6.2.

Table 6.2 Bivariate Correlation with Hall & Gingerich 'Institutional Complementarity' Term

<i>Variable</i>	This Studies ' IC_i ' Term	H&G 'Instit. Comp' Term	H&G Coordination Index
This Studies ' IC_i ' Term	1 (0.000)	0.728*** (0.000)	0.725*** (0.000)
H&G Instit. Comp. Term	0.728*** (0.000)	1 (0.000)	0.928*** (0.000)
H&G Coordination Index	0.725*** (0.000)	0.928*** (0.000)	1 (0.000)

***p<0.010, **p<0.05, *p<0.10; Significance levels in parentheses

These results suggest that this studies measure has validated statistical power. This provides this study the credibility and reliability to carry forward the ‘institutional complementarity’ hypothesis. The results also suggest that there is little institutional change over time, given that Hall and Gingerich (2009) capture their cross-sectional snapshot of institutions in the early 1990’s. The institutional formats of countries are largely similar, and the countries situation on their coordination planes suggests countries have changed little. It also shows that the dichotomy between varied forms of coordination still provides meaningful interpretation in-line with the acceptance of comparative institutionalism scholarship.

6.5 Diagnostic Analysis

This study employs a range of diagnostic tests to ensure there remain no violation of assumptions within the model specification, whilst increasing the efficiencies and consistencies of parameter estimations. Firstly, the Wooldridge test for autocorrelation in the panel data confirms the presence of first order autocorrelation (AR1)¹. Secondly, the Cook & Weisberg test² for heteroskedasticity suggests there is non-constant variance in the residuals and therefore the data structure is heteroskedastic. As a result, this study follows Wooldridge (2013, p. 511) in adjusting the standard errors to account for both heteroskedasticity and autocorrelation. These results consequently operate at a higher statistical margin with the use of robust standard errors. A Wald chi squared test is further employed to test whether all year coefficients are jointly equal to 0, which indicates whether the inclusion of year dummies is required. The null hypothesis is rejected which indicates that the models should account for time fixed

¹Wooldridge Test for Autocorrelation: H_0 - No first order autocorrelation, F test - 5.473

²Cook & Weisberg test: H_0 - Constant variance, $x^2 = 75.89^{***}$

effects³. Further, the Pesaran test for contemporaneous correlation indicates that the residuals are uncorrelated which suggests cross-section independence⁴ (no spatial correlation within the data).

The main assumption sufficient for consistent estimation is that the regressors are either exogenous, or the potential endogeneity is accounted for. Endogeneity occurs when a regressor is not entirely exogenous but depends on some unmodeled causes that drive other variables in the model. The error term in a regression model captures the effect of these causes. Thus, researchers detect endogeneity when the explanatory variables correlate highly with the error term where:

$$\text{corr}(x, u) \neq 0$$

Upon performing bivariate correlations, there remains no significant correlation between the error term and individual regressors, which indicates independence of explanatory variables. Nonetheless, presence of theorised or statistical endogeneity can be treated in two ways (Blanchflower & Oswald, 1998). Firstly, one may instrument for the effect, hereby creating a proxy based ‘instrumental’ variable which accounts for the endogenous relation. Alternatively, lags can be applied in which case one uses values of explanatory measured some time before the dependant variable. In the interests of inference robust to all assumptions, this study applies a precautionary ‘distributed lag model’ following Stephan et al (2015) amongst others. All time variant independent variables are lagged by one year to reduce any potential endogeneity between the hypothesised antecedents and the regressed variable. These models therefore operate

³Wald $x^2 = 0.005^{***}$

⁴Pesaran CD test is non-significant with a mean P value of 0.437 across all models

amongst a stronger and restrictive set of assumptions to which further extends the robustness of the parameter estimates.

6.6 Estimation Results

Model parameters for additive Models 1 and 2 were estimated using the Pooled OLS (POLS) method in principal. Models 3 and 4 however extend Pooled OLS analysis with the complementary addition of using Random Effect panel estimators. Applying the Lagrange Multiplier test developed by Breusch & Pagan (1980), suggests that there are significant differences across units when extending beyond additive models, therefore this study performs a complementary set of regression estimators. However, the pooled OLS and random effects regressions give similar results, as such there is a documentation of both parameter estimates to gauge the robustness of results. Overall, models were tested to ensure correct functional form and robust standard errors were used to mitigate the issues of heteroskedasticity. Estimated results for Models 1 and 2 are provided in Table 6.3.

6.6.1 Main Estimation Results

In the first step, only control variables were included in the regression equation (Model 1a) to which acts as the base model. Overall, the regression model was highly significant ($R_2 = 0.443$, $F = 6.07$, $p < 0.001$). As previous theory and empirical evidence suggests, all control variables were statistically significant at the 99 % level and of sizeable magnitudes. Unemployment presents a negative and significant coefficient, thus confirming that a higher rate of unemployment is associated with a lower level

of aggregate entrepreneurial activity. The prevalence of foreign firm activity as a proxy for by FDI Stock is positively associated with the dependant variable, suggesting that there are genuine positive externalities produced for new firm creation by the average presence of foreign investment. Akin to previous empirical evidence, $LnGDP$, population density and dependency ratios all attain a negative relationship with aggregate rates of entrepreneurship.

Table 6.3 Regression Results (1)

Regression Equations; DV: TEA					
Pooled OLS w/ Panel Corrected Standard Errors & Distributed Lags					
Models:	(1 _a)	(2 _a)	(2 _b)	(2 _c)	(2 _d)
$\ln GDP_{it-1}$	-3.438*** (-4.49)	-4.9842*** (-5.13)	-2.757*** (-4.02)	-2.061*** (-3.83)	-4.189*** (-5.51)
$Population\ Density_{it-1}$	-0.012*** (-5.72)	-0.0112*** (-6.86)	-0.0117*** (-5.32)	-0.013** (-5.22)	-0.020*** (-6.01)
$Unemployment_{it-1}$	-0.3401*** (-5.31)	-0.3975*** (-4.82)	-0.3021*** (-4.53)	-0.453*** (-6.50)	-0.252*** (-4.72)
$Dependency\ Ratio_{it-1}$	-0.1301*** (-3.11)	-0.1759*** (-3.62)	-0.0906** (-2.00)	-0.1715*** (-3.57)	-0.0099*** (-6.09)
$FDI\ Stock_{it-1}$	0.0190*** (4.10)	0.0178*** (4.22)	0.0197*** (4.50)	0.0071** (2.00)	0.0211*** (2.74)
Constant	54.222*** (6.78)	70.412*** (6.61)	44.450*** (5.56)	41.373*** (7.72)	61.063*** (7.63)
PM_i		-11.122*** (-6.12)			
PM_i^2		10.1421*** (3.16)			
LM_i			-7.524*** (-7.16)		
LM_i^2			22.719*** (4.59)		
ES_i				-9.221*** (-6.33)	
ES_i^2				14.198*** (4.16)	
FS_i					-5.530*** (-5.27)
FS_i^2					4.730 (1.35)

Year Fixed Effects	Included	Included	Included	Included	Included
R^2	0.443	0.567	0.523	0.626	0.530
F	6.06***	14.13***	10.27***	11.65***	11.75***
Observations	145	145	145	145	145
Countries	29	29	29	29	29

Breusch & Pagan Lagrangian Multiplier (LM) test for random effects: $\chi^2(1) = 146.32$, $prob > \chi^2 = 0.000***$; All models estimated use robust standard errors adjusted for heteroskedasticity and AR(1); T statistics in parentheses; $***p < 0.010$, $**p < 0.05$, $*p < 0.10$; Instruments: Lagged ($t-1$) Explanatory time-variant Control Variables adjusted for endogeneity; IC terms are mean-centred; all models include year dummies as statistically they are not jointly equal to zero, Wald Chi Squared = 0.006***; mean VIF in all models $n < 10$; Wooldridge test for first order autocorrelation (AR) $F = 5.473$, $prob > F = 0.0267$; Cook-Weisberg test for heteroskedasticity χ^2 squared = 75.89, $prob > \chi^2 = 0.000***$; Year effects included but not reported; (i) denotes panel-variance and time-invariance of the regressor, (it) denotes panel-variance and time-variance of the regressor.

Table 6.4 The Impact on TEA of Institutional Diversity & Complementarities

Models:	Regression Equations; DV: TEA					
	Pooled OLS w/ Panel Corrected Standard Errors & Distributed Lags		GLS Random Effects w/ Distributed Lags			
	(1 _a)	(3 _a)	(4 _a)	(1 _b)	(3 _b)	(4 _b)
$\ln GDP_{it-1}$	-3.438*** (-4.49)	-3.191*** (-5.13)	-3.362*** (-5.81)	-1.923* (-1.67)	-2.045** (-1.97)	-2.5420*** (-2.62)
$Population\ Density_{it-1}$	-0.012*** (-5.72)	-0.0122*** (-6.71)	-0.0104*** (-6.42)	-0.0125** (-2.11)	-0.011*** (-2.66)	0.0083*** (-2.61)
$Unemployment_{it-1}$	-0.3401*** (-5.31)	-0.3901*** (-6.31)	-0.3213*** (-5.90)	-0.0075 (-0.05)	-0.0550 (-0.40)	-0.0551 (-0.41)
$Dependency\ Ratio_{it-1}$	-0.1301*** (-3.11)	-0.1300*** (-2.93)	-0.1502*** (-3.42)	-0.3690** (-2.01)	-0.326** (-2.10)	-0.3090*** (-2.09)
$FDI\ Stock_{it-1}$	0.0190*** (4.10)	0.0097** (2.53)	0.0056* (1.71)	0.0104*** (4.51)	0.0081*** (4.03)	0.0060*** (3.25)
Constant	54.222*** (6.78)	52.358*** (7.71)	53.122*** (8.62)	47.3323** (2.53)	46.712*** (2.92)	49.4122*** (3.54)
IC_i		-5.863*** (-6.81)	-8.7382*** (-9.28)		-5.251*** (-2.67)	-15.750*** (-4.08)
IC_i^2			16.8050*** (7.34)			13.817*** (3.41)
Year Fixed Effects	Included	Included	Included	Included	Included	Included
R^2	0.443	0.585	0.659	0.306	0.463	0.583
F	6.06***	10.03***	12.21***			
Wald χ^2				40.55***	50.22***	55.42***
Observations	145	145	145	145	145	145
Countries	29	29	29	29	29	29

Breusch & Pagan Lagrangian Multiplier (LM) test for random effects: chibar squared (01) = 146.32, prob > chibar squared 0.000***; All models estimated use robust standard errors adjusted for heteroskedasticity and AR(1); T statistics in parentheses; ***p<0.010, **p<0.05, *p<0.10; Instruments: Lagged ($t-1$) Explanatory time-variant Control Variables adjusted for endogeneity; IC terms are mean-centred; all models include year dummies as statistically they are not jointly equal to zero, Wald Chi Squared = 0.006***; mean VIF in all models n<10; Wooldridge test for first order autocorrelation (AR) F = 5.473, prob > F = 0.0267; Cook-Weisberg test for heteroskedasticity chi squared = 75.89, prob > chi2 = 0.000***; Pesaran CD test of GLS models both indicate cross-sectional independence, mean p value = 0.437; Year effects included but not reported; (i) denotes panel-variance and time-invariance of the regressor, (it) denotes panel-variance and time-variance of the regressor.

The next step called for examining the main effects of individual institutions on the dependant variable. Here there is the inclusion of individual coordination indices for each institutional sub-sphere for country i . In principle, quadratic terms are introduced to firstly examine potential non-linearity. A statistical acceptance of these results will ex-post reject the hypothesis that institutions converging on more ‘liberal’ orientated directions will tend to increase aggregate entrepreneurial performance. This would be akin to the institutional convergence perspective, which argues that the institutional mould of a given sub-sphere will be significant and influential in one linear direction, i.e. the most liberal direction.

Overall, all dimensions of Model 2 ($a - d$) were statistically significant with a substantial change in R_2 over the base model. Firstly, all control variables are broadly stable and attain their baseline coefficient weights and statistical direction. Secondly, for product market coordination, labour market coordination and education system coordination, the results all commonly suggest a polynomial ‘U’ shaped relationship (Models 2a, 2b & 2c respectively). The more market based (0) or strategically coordinated (1) these institutions are the higher estimated rates of entrepreneurial activity. This contrasts the common hypothesis that institutions solely converging upon common liberal and market led dynamic produce positive marginal returns to entrepreneurship. In fact, diversity along institutional sub-spheres provides functional equivalence; the more institutions are liberal, or the more institutions are strategically coordinated vis-a-vis an incoherent mix, the higher marginal returns to entrepreneurial activity. However, there is no significant statistical polynomial relationship between the financial system and aggregate entrepreneurial rates (Model 2d). Removing the squared term from the regression then returns a significant negative relationship⁵, suggesting that on

⁵Regressing a model excluding the squared term yields an estimate of the following: $\beta = -5.442, t = -4.87^{***}$. All control variables were stable akin to the baseline regression model.

average more liberal orientated financial systems increase the returns to entrepreneurship. These results go some way to rejecting hypothesis one; alternatively accepting the null hypothesis.

To further characterise the theory of comparative institutionalism, Model 3 includes the institutional complementarity term (IC_i). As suggested and operationalised by Hall & Gingerich (2009), the inclusion of a balanced term assesses the nature of institutional complementarities. Specifically, it tests the strength and absolute direction of country i 's complementarity set, and therefore the degree to which it is non-market based. Here both Pooled OLS and Random Effects estimators are applied and the results as both documented (Model 'a' – Pooled OLS, Model 'b' – Random Effects). These are shown by Table 6.4. Overall, both regression equations are highly significant across both estimators. Models 3a and 3b test linearity, assuming that countries which converge on a specific direction of institutional complementarity will have statistically higher impact on the rate of entrepreneurial activity (hence linear relationship). Again, this is partially akin to the institutional convergence perspectives that there is one best set of institutions for entrepreneurship. The IC_i term is statistically significant with an estimated negative coefficient, showing that countries with an institutional complementarity set nearing a strong market/liberal based logic, will have higher rates of entrepreneurial activity. The functional relationship between institutions provides more statistical power than testing institutions in isolation.

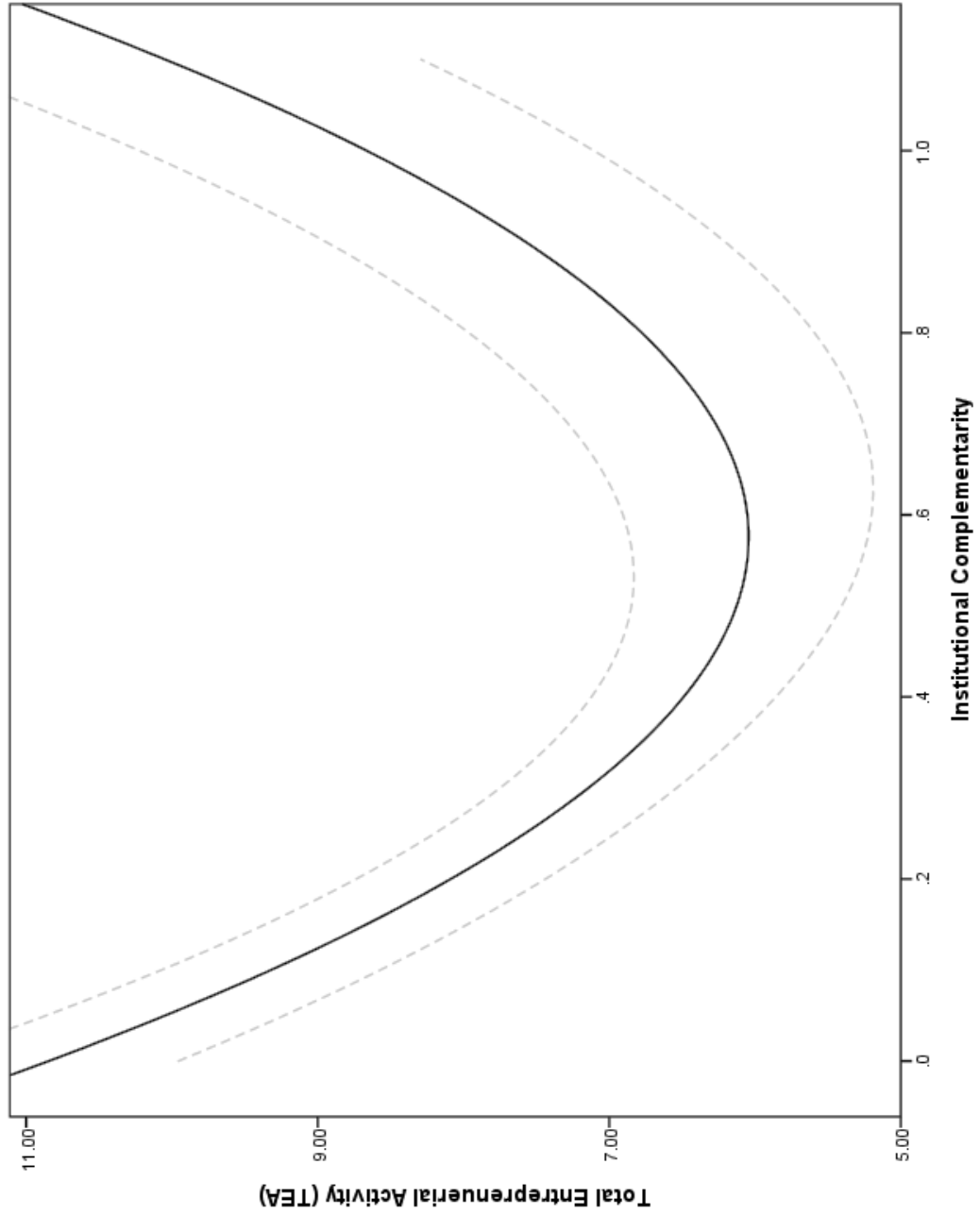
Where the previous models are tested with a linear treatment, specifying a functional form, the next step is to examine any potential non-linear relationships between unique sets of institutional complementarities and the dependant variable. To test non-linear relationships, this model includes a quadratic IC_i term represented by the parameter of β_2 . This allows the model to estimate for any potential non-linear

relationships. Overall, the regression equations of Models 4a and 4b are highly significant with a sizeable positive increase in R^2 from respective Models 3a and 3b. Both the IC_i terms are highly significant and of inverse signs, representing a non-linear polynomial relationship between the format of the institutional complementary set and the aggregate levels of entrepreneurial activity. Both estimators provide broadly equivalent and stable results which imply general robustness to the estimated coefficients. Therefore, the hypothesis carried forth by the institutional diversity perspective holds substantial weight (Hypothesis Two). The significance and inverse signs of the coefficients on the IC_i terms indicated that the relationship between the format of institutional complementarity and TEA is best estimated by non-linearity. The estimated relationship between the regressors and DV when the control variables are at their means is best described as U-shaped. Where the institutional structure of the political economy allows for higher levels of market coordination (0) or higher levels of strategic coordination (1), estimated entrepreneurship rates are higher than they are when there is more variation in the types of institutional complementarity present in the political economy.

These results suggests that the institutional diversity and complementarities perspective of the comparative institutionalism literature, built on the distinction between coherent and incoherent sets of political economies (Hall & Gingerich, 2009; Amable, 2009; 2016) has genuine merit. When complementary institutions are present across spheres of the political economy, aggregate rates of entrepreneurship are higher; both liberal and strategically coordinated political economies appear to offer general efficiencies to economic actors, a theme parallel to the arguments of Hall & Soskice. These results demonstrate that joint institutional configurations of institutional sub-spheres offer more explanatory power than examinations of their individual effects. Using Model 4b for the simulation, Figure 6.1 shows the estimated relationship between institutional

coordination and total aggregate entrepreneurship when the control variables are held at their means. Figure 6.2 shows where the means and variance of IC_i situate against the estimated relationship. The U-shaped ‘functional equivalents’ relationship is clearly apparent.

Fig. 6.1 Estimated Relationship between Institutional Diversity, Coordination & Aggregate Entrepreneurship

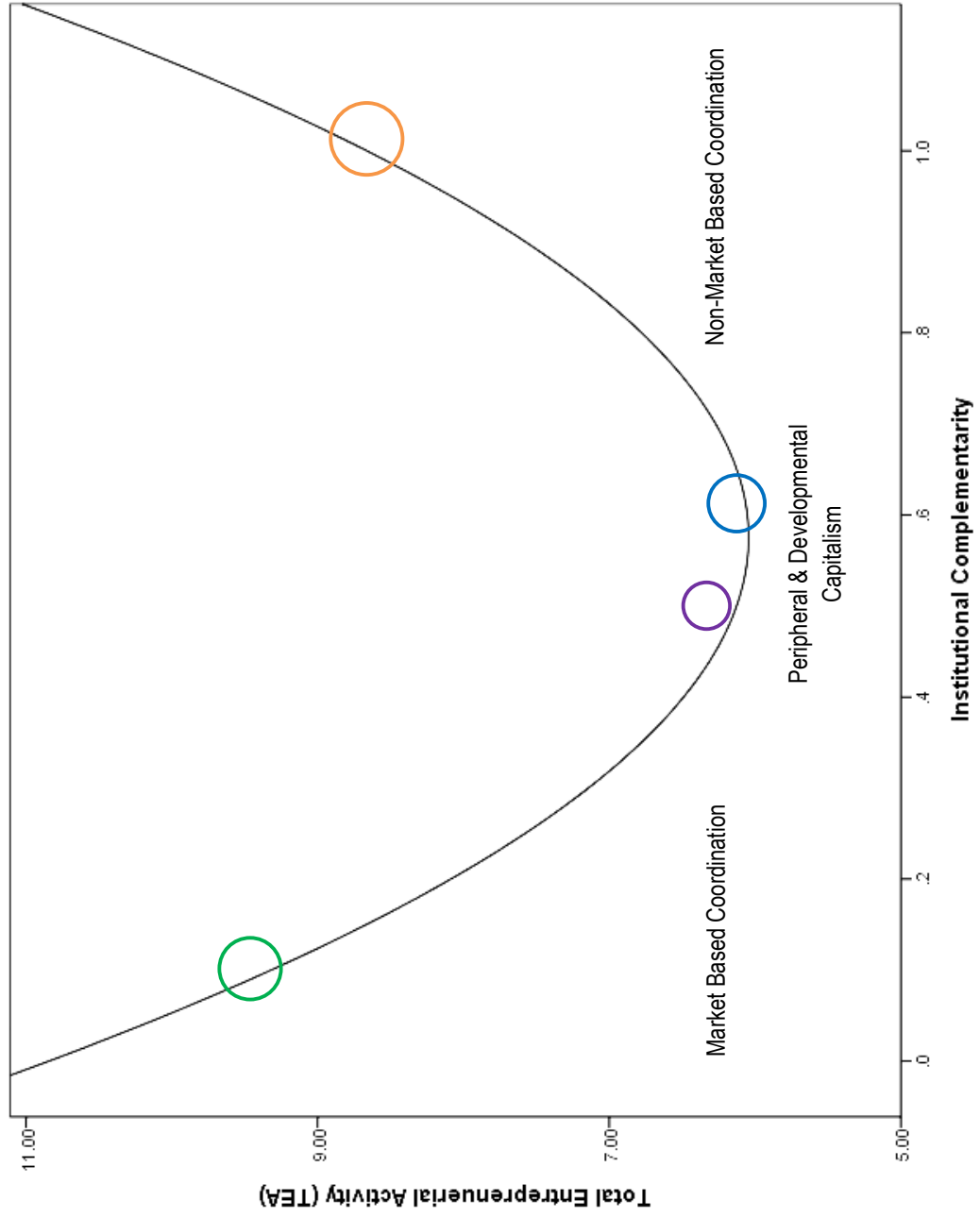


Predicted Values denoted by the solid black regression line; 90% confidence intervals denoted by dashed lines; Simulation based on Model 4b where control variables held at their means.

Following estimations, checks for multicollinearity were performed by examining the variance inflation factor (VIF) values, an accepted assessment of potential multicollinearity issues (Hair et al, 2006). It is largely assumed that VIF values higher than 10.0 highlight issues of multicollinearity amongst regressors. This study therefore treats 10.0 as the cut-off point. To avoid issues with multicollinearity, the IC_i terms and polynomial term were mean-centered before inclusion within the regression estimation models, as suggested by Aiken et al (1991). All VIF values were well below the threshold of 10.0 with an overall mean of 2.67, which shows there is no issues of multicollinearity present.

In sum, based on the regression models with the inclusion of numerous macro-level control variables and in which include varied sets of institutional variables simultaneously, these results show that aggregate entrepreneurial performance across countries is best predicted by the institutional diversity hypotheses. Countries with institutions closer to coherent complementarity sets of either market based capitalism or coordinated based capitalist, will have a higher estimated rates of entrepreneurial activity than countries defined by weak complementarity sets and an incoherent mix of market and coordination based logics. These results show a U-shaped relationship between the institutional forms of capitalism and total entrepreneurial activity. Aggregated entrepreneurial levels are higher where the values are closer to 0 (market based) or 1 (coordination based). The coherence of the institutional configuration has a significant effect on estimated rates of total entrepreneurial activity, amongst a set of well-defined control variables. Rather than there being a one best set of institutions, but rather ‘two best ways’.

Fig. 6.2 Estimated Relationship between Institutional Diversity, Coordination Means & Aggregate Entrepreneurship



Green transposed circle represents the market based capitalism IC_i mean score, purple & blue circles represent the mean IC_i score for peripheral & developmental capitalism respectively, & orange is the mean IC_i score for coordination based capitalism; Size of the circles represent relative standard deviations around their means.

At a more general level, Models 2, 3 and 4 indicate the overall support that the institutional context matters where entrepreneurs allocate their efforts. Specifically, the joint contribution of the four institutional sub-spheres and polynomial terms provides evidence that the allocation of entrepreneurial activity is partially determined by the coherence of the institutional environment. This is evidenced by superior performance of Model 4 relative to Models 2 and 3, particularly in relation to the F score and sizeable difference in variance explained. The institutional diversity perspective explains more unique variance of the diverse nature of comparative entrepreneurship rates. Institutions matter, but how they matter remains the key research question for institutional based international entrepreneurship scholarship.

6.6.2 Institutional Coherence: *Linearisation, Estimation & Related Comparative Performance of Coherent Complementarities*

For purposes of interpretation, since the results yield a quadratic function where models of capitalism represent institutional coherence the more their institutional complementarity index is equal to 0 or 1, the results of Model 4 are linearised to create a single linear measure of ‘*institutional coherence*’. Linearisation of institutional complementarity of country i is transformed through the following statistical treatment:

$$(abs(minima - x_i))/minima$$

where the global minima is given where the marginal rate of change of x is:

$$\frac{\partial y}{\partial x} = 0$$

Where y is TEA and x is the ‘institutional complementarity’ term. Therefore the ‘institutional coherence’ (IH_i) measure of country i is given as:

$$IH_i = (abs[f'(x) - (IC_i)]/[f'(x)])$$

where...

$$f'(x) = \frac{\partial y}{\partial x} = 0 = \frac{15.750}{27.636} = x$$

To formally illustrate the responsiveness of changes in *institutional coherence* (IH_i) on TEA, the following model specification is estimated through the same estimation strategies of Model 4b:

$$TEARate_{it} = \alpha_t + IH_i\beta_1 + x_{it}\gamma + c_i + u_{it} \quad (6.2)$$

where IH_i is the linearised *institutional coherence* index of country i and x_{it} is the same control variable row vector which change across i and t specified in Chapter 6. Again, α_t is the time dummy intercepts and the composite errors at time t is equal to $c_i + u_{it}$. Where the marginal returns and potential returns to system-reinforcing institutional coherence are represented by:

$$\left(\frac{\partial y}{\partial IH_i} \right) = \hat{\beta}_1 > 1: \text{Increasing Returns to Increasing Institutional Coherence}$$

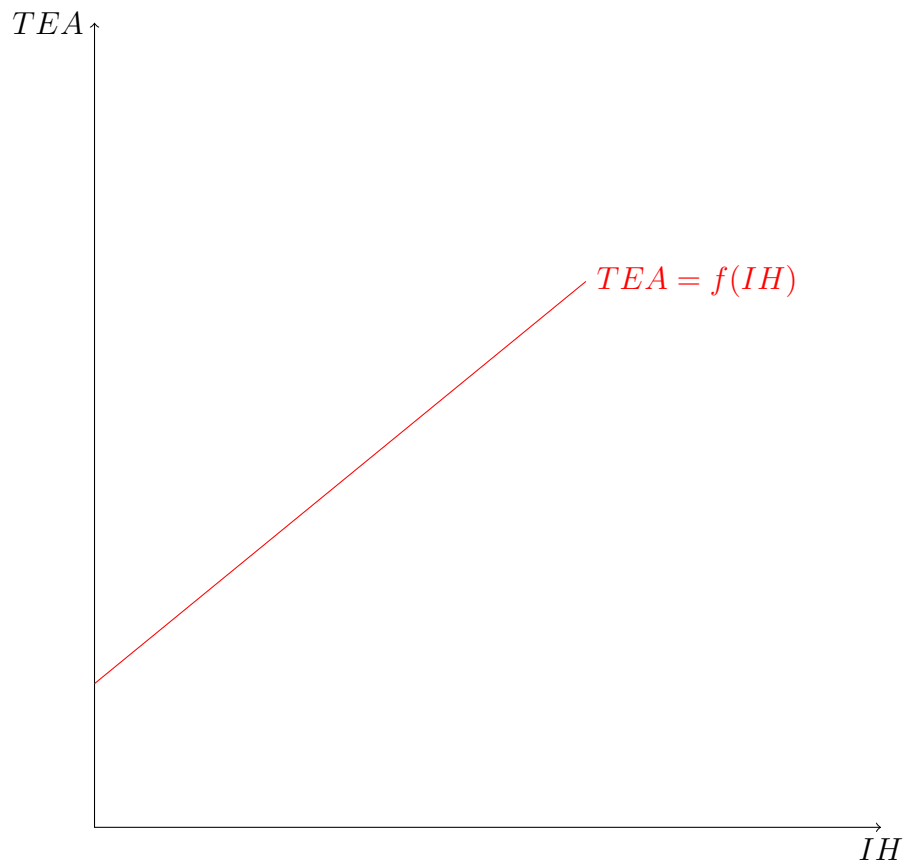
$$\left(\frac{\partial y}{\partial IH_i} \right) = \hat{\beta}_1 < 1: \text{Diminishing Returns to Increasing Institutional Coherence}$$

Model estimation yield estimates of the following form:

$$\widehat{TEARate}_{it} = 5.48 + 4.226 \cdot IH_i + \bar{\gamma} \cdot \bar{x}_{it} \quad (6.3)$$

Whilst these results are expected given Model 4b is significant, the results formally present that there a positive returns to increasing institutional coherence ($\hat{\beta}_1 = 4.226^{***}$)⁶. The greater the degree of institutional coherence of the political economy, the higher the estimated rates of Total Entrepreneurial Activity (TEA). Differently, the closer the institutional complementarity set is market based (akin to LME) or coordinated based (akin to CME), the greater the marginal returns of TEA. The linearised estimation is modelled below:

⁶The control variables all attain their respective signs, approximate magnitudes and significance of Model 4b. R_2 is equal to 0.523 with Wald x^2 is 54.61^{***}



These results help interpret the notion of institutional coherence from the main results, concluding that aggregate entrepreneurial activity is a function of institutional coherence.

6.6.3 Robustness Analysis

The comparison of the two main panel data estimation methods provides a natural point of robustness analysis. However, a number of additional sensitivity robustness checks were undertaken to further confirm the validity of the main results. This was conducted in two ways. Firstly, several institutional variables were removed on a basis of specific characteristics. Secondly, the study ran a cross-sectional OLS regression

estimation acting as a stationary test for the main panel model. Overall, the results obtained through these new tests are consistent with and reinforce the original findings. The models were robust and applicable diagnostics analysis were performed.

Exclusion of Specified Variables

To further test the robustness of the original findings, this study moves forward by removing certain factors from the calculations of institutional coordination and complementarity terms. Removal of variables was based on two characteristics. Firstly, if variables are relatively new to comparative institutionalism, they have been removed to avoid potential bias. Secondly, variables are removed which vary with the level of aggregate spending. Whilst these types of measures have been used before, short run variation in the level of spending may distort the institutional measurement (yet measuring institutional phenomena), and therefore have been removed to test the robustness and sensitivities of variables. The removed variables from the institutional coordination indices calculations are reported by Table 6.6. The institutional complementarity terms have been normalized and mean centered following the same treatment of the original model specifications. Table 6.5 presents the results of these re-estimations.

Table 6.5 Removed Variables

Institutional Sub-Sphere	Removed Factor	Retained Factors
Labour Markets	Active Labour Market Spending	Wage Bargaining Labour Flexibility
Product Markets	None	Governance of Internal Market Public Involvement in Domestic Product Market
Education System	Govt. Support for Research & Formal Education Absorption of Secondary Educated Labour	Explicit Protection against Foreign Competition Institutionalised Skill Regime
Financial System	Concentration of Banking System Competition in Banking System	Availability of Varied Forms of Capital Type of Financial System

Table 6.6 Robustness of Regression Results to the Exclusion of Specific Variables

Models:	Regression Equations; DV: TEA					
	Pooled OLS w/ Panel Corrected Standard Errors & Distributed Lags		GLS Random Effects w/ Distributed Lags			
	(1 _{ar})	(3 _{arr})	(4 _{arr})	(1 _{br})	(3 _{br})	(4 _{br})
<i>LnGDP</i> _{<i>t</i>-1}	-3.438*** (-4.43)	-3.678*** (-5.42)	-3.754*** (-5.92)	-1.931* (-1.60)	-2.410* (-2.18)	-2.682*** (-2.68)
<i>Population Density</i> _{<i>t</i>-1}	-0.011*** (-5.71)	-0.010*** (-6.00)	-0.011*** (-6.32)	-0.011** (-2.12)	-0.011* (-2.32)	0.012** (-2.43)
<i>Unemployment</i> _{<i>t</i>-1}	-0.3521*** (-5.31)	-0.272*** (-4.67)	-0.192*** (-3.63)	-0.0062 (-0.06)	0.000 (0.00)	0.0123 (0.10)
<i>Dependency Ratio</i> _{<i>t</i>-1}	-0.1318*** (-3.21)	-0.112*** (-2.46)	-0.012*** (-3.42)	-0.3701** (-2.00)	-0.332* (-1.85)	-0.356** (-2.01)
<i>FDI Stock</i> _{<i>t</i>-1}	0.0180*** (4.09)	0.0142*** (3.81)	0.0140*** (3.82)	0.0115*** (4.50)	0.009*** (4.32)	0.0092*** (4.70)
Constant	54.209*** (6.80)	55.433*** (7.61)	56.505*** (8.43)	47.3344** (2.52)	50.842*** (3.10)	53.153*** (3.72)
<i>IC</i> _{<i>i</i>}	-5.051*** (-5.78)	-10.08*** (-7.03)	-10.08*** (-7.03)	-5.557*** (-2.72)	-11.852*** (-3.42)	-11.852*** (-3.42)
<i>IC</i> _{<i>i</i>} ²		15.44*** (5.22)			19.712** (2.41)	

Year Fixed Effects	Included	Included	Included	Included	Included	Included
R²	0.442	0.531	0.602	0.305	0.438	0.533
F	6.06***	8.03***	8.72***			
Wald <i>x</i>²				40.55***	37.40***	37.25***
Observations	145	145	145	145	145	145
Countries	29	29	29	29	29	29

Breusch & Pagan Lagrangian Multiplier (LM) test for random effects: *chibar* squared (01) = 146.32; *prob* > *chibar* squared 0.000***; All models estimated use robust standard errors adjusted for heteroskedasticity and AR(1); T statistics in parentheses; ***p<0.010, **p<0.05, *p<0.10; Instruments: Lagged (*t* - 1) Explanatory time-variant Control Variables adjusted for endogeneity; *IC*_{*i*} terms are mean-centred; all models include year dummies as statistically they are not jointly equal to zero, Wald Chi Squared = 0.005***; mean VIF in all models n<10; Wooldridge test for first order autocorrelation (AR) F = 5.46, *prob* > F = 0.0284; Cook-Weisberg test for heteroskedasticity chi squared = 74.3, *prob* > chi2 = 0.000***; Pesaran CD test of GLS models both indicate cross-sectional independence, mean p value = 0.47; Year effects included but not reported; (*t*) denotes panel-variance and time-invariance of the regressor, (*it*) denotes panel-variance and time-variance of the regressor.

Table 6.6 depicts the coefficients on the institutional complementarity term and the polynomial IC term for each combination of excluded cases. These are undertaken against the backdrop of the distributed lag control variable strategy employed within the main results. Both estimates clearly suggest that our results do not depend on the inclusion of any one of these variables as model three attains statistical significance; there is a polynomial non-linear ‘U’ shaped relationship representative of the original results. The findings are remarkably robust to the exclusion of variables, and therefore do not pose serious threat to the reliability of the original findings.

Time Invariant Modelling

To further examine the robustness of the panel model results, the study also ran a cross-sectional ordinary least square regression estimator whilst maintaining the same model and data specification. As a result, both dependant and explanatory control variables of the following specification become time invariant ($t = 1$):

$$\begin{aligned} TEARate_i = & \beta_0 + \beta_1 IC_i + \beta_2 LnGDP_i + \beta_3 PD_i \\ & + \beta_4 Un_i + \beta_5 DepR_i + \beta_6 FDI_i + \varepsilon_i \end{aligned} \quad (6.4)$$

$$\begin{aligned} TEARate_i = & \beta_0 + \beta_1 IC_i + \beta_2 IC_i^2 + \beta_3 LnGDP_i + \\ & \beta_4 PD_i + \beta_5 Un_i + \beta_6 DepR_i + \beta_7 FDI_i + \varepsilon_i \end{aligned} \quad (6.5)$$

By averaging the time invariant variables across the six year period, the data structure is transformed into a cross-sectional static configuration. This allows us to validate the original panel findings by estimating across one period. It is a useful method of assessing whether the panel data specifications were bias towards potential

over-estimation and general measurement error (Biorn, 1992; Griliches & Hausman, 1986). This form of robustness analysis therefore acts as a stationary test of the main panel model. Where TEA data was missing for a specific year, we used the TEA data from the previous available year to facilitate data processing. Table 6.7 presents the OLS regression estimates.

These results show robustness of the original results in several ways. The parameters of interest in each model are broadly stable and representative of the original panel estimates. The polynomial and additive models are highly significant, of inverse signs and of similar magnitude to the varied forms of econometric estimation. Again, these models which do not vary with time do not show significantly different results to the original panel model estimators, which further validate the original findings. Overall, these results suggest that the findings concerning the effect of institutional complementarities and coordination are robust.

6.7 Summary of Support for Hypotheses

Table 6.8 summarises the study's results in terms of hypotheses support. In general, the results of the panel analysis offer the general understanding that the institutional environment is a driver of entrepreneurial activity. Specifically, these results show that institutional diversity, as defined by the varied institutional configurations of countries, explains the nature of aggregate entrepreneurship performance. Countries which posit coherent forms of institutional complementarities; market or coordination based institutions provide genuine efficiencies in terms of aggregate entrepreneurial activity. This contrasts with countries which are identified as having a mix of the two

Table 6.7 Robustness Estimates of Stationary Cross-Sectional Equations

	Regression Equations; DV: TEA		
	OLS	OLS	OLS
Model:	(1 _{cs})	(3 _{cs})	(4 _{cs})
$\ln GDP_i$	-2.048** (0.860)	-1.846** (0.710)	1.979*** (0.587)
$Population\ Density_i$	-0.010*** (0.003)	-0.010*** (0.003)	-0.008*** (0.002)
$Unemployment_i$	-0.284** (0.115)	-0.308*** (0.095)	-0.247*** (0.080)
$Dependency\ Ratio_i$	-0.138 (0.093)	-0.140* (0.077)	-0.158** (0.064)
$FDI\ Stock_i$	-0.013 (0.009)	0.005 (0.007)	0.002 (0.006)
Constant	39.574*** (8.544)	38.097*** (7.045)	38.720*** (5.811)
IC_i		-4.463*** (1.291)	-7.126*** (1.325)
IC_i^2			12.77*** (4.098)
R	0.707	0.822	0.889
R²	0.499	0.676	0.790
F stat	4.389***	7.638***	11.258***

Standard errors in parentheses; (*i*) denotes time-invariant explanatory variable;
 ***p<0.010, **p<0.05, *p<0.10.

institutional forms, or weaker forms of complementarities. These results show that aggregate entrepreneurial performance is a function of the coherence of the institutional system. Countries which have higher levels of institutional coherence posit higher rates of aggregate entrepreneurship than those with lower levels of coherence. As such, these results show support for H2 whilst broadly rejecting H1.

Table 6.8 Summary of Support for Hypotheses

Institutional Perspective	Research Hypotheses	Results
Convergence	<p>H1: 'Countries converging on a market led form of institutions should have higher levels of aggregate entrepreneurial activity than non-market forms of institutions, therefore showing that the institutional convergence perspectives can explain the impact of institutions on entrepreneurship'</p>	Not Supported
Divergence & Complementarities	<p>H2: 'Rates of aggregate entrepreneurship should be higher in nations where levels of market led institutional complementarities or egalitarian led institutional complementarities are high across spheres of the political economy, but lower in nations where neither type of coordination and complementarity is so well developed, or market and strategic coordination are combined'</p>	Supported

6.8 Chapter Summary

The purpose of this chapter was to present and partially comment on the empirical data concerning the second and third research objective of this study. These objectives and research questions were addressed through the specification of four panel models, estimated through two strategies: (1) Pooled OLS and (2) GLS Random Effects estimators. This section then went on to testing the robustness of the findings, by methods of variable exclusion and time invariant modelling. In general, the results of the panel analysis offer a general understanding that the institutional environment is a driver of entrepreneurial activity. Specifically, these results show that institutional diversity, as defined by the varied institutional configurations of countries, help explain the nature of aggregate entrepreneurship performance. Countries which posit coherent forms of institutional complementarities; market or coordination based institutions provide genuine efficiencies in terms of aggregate entrepreneurial activity. Discussion of these key findings, with links to the relevant literature and appropriate theoretical concepts, is provided in the following chapter.

Chapter 7

Discussion

7.1 Introduction

This chapter aims to: (a) further analyse and contextualise the main research findings presented in Chapters 5 and 6; and (b) explain how these new findings contribute to existing knowledge. The implications of research findings and the contributions of the study to other relevant literatures will then be outlined in the concluding sections. This arrangement allows the present chapter to focus on the wide ranging discussion of what the results show and how the novel research findings make a theoretical, empirical and public policy contribution. This is considered appropriate, in view of the fact that this study has been informed by both the theoretical and empirical gaps in the literature.

This thesis has been guided by three specific research questions outlined in Chapter 3, with Chapter 5 presenting results for Research Question 1, and Chapter 6 presenting

results for Research Questions 2 & 3. These Chapters are used to structure the current discussion through the use of ‘headline findings’.

7.2 Overview of Findings

The first of the results chapters was concerned with understanding and taxonomising institutional diversity (Chapter 5; Research Question 1), which leads through into understanding the impact of institutions, their diversity, on aggregate entrepreneurship (Chapter 6; Research Questions 2 & 3). The empirical evidence of Chapter 5 yields the following ‘headline finding’:

There remains rich institutional diversity between political economies, identified by four clusters of capitalism, defined by complementary variants across institutional sub-spheres

The empirical evidence of Chapter 5 illustrates the wide basis of institutional diversity and variety between the sample of political economies. More importantly, these institutional varieties were carried forth when attempting to understand the effect of institutional diversity on aggregate entrepreneurship. As a result, Chapter 6 yields the following headline finding:

Institutions affect aggregate levels of entrepreneurship. When complementary institutions are present across the sub-spheres of the political economy, rates of Total Entrepreneurial Activity are higher. Institutional diversity identified by this

specification appear to offer unique explanations of cross-national levels of entrepreneurship

The main finding with regards the second research question is that institutions have a decisive impact on the prevalence and nature of entrepreneurship. That is, institutions and institutional diversity can help explain the cross-national variances in aggregate levels of entrepreneurship. More explicitly, it was found that perspectives from comparative institutionalism provide a powerful analytical tool as suggested by the following headline finding:

Institutional diversity is a key driver of varied aggregate entrepreneurial rates. Specifically, the level of entrepreneurial rates is driven by the degree of institutional coherence of the political economy. This implies that aggregate economic performance is estimated to be higher in nations whose institutionalised practices correspond more closely to the coherent types of market-based and strategic coordination models of capitalism

These findings draw attention to arguments concerning the degree to which countries institutional frameworks need to be closely complementary and institutionally coherent to allow for greater firm and entrepreneurial activity. In this regard, institutions function differently in different national contexts, and consequently their influence with the presence of potential competing institutional logics. The mechanisms through which the influence of institutions is manifested have been found to be similar across the sample; that is, by determining transaction costs through the nature of coordination; through the function of institutional complementarities, and thus influencing the state of economic inputs for entrepreneurial general efficiencies.

7.2.1 Institutional Capitalist Diversity

The empirical evidence of Chapter 5 illustrates the wide basis of institutional diversity and variety between the sample of political economies. Exploiting the plurality of institutional approaches to build on the classifications of the Governance Approach to comparative institutionalism, these findings define a wide continuum of institutional dimensions/factors which underpin differences between the sample of OECD countries. These help illuminate responses to the first research question. Indeed, capitalist institutional diversity does exist at a rich level, and depending on the level of resolution, institutional coordination can provide natural splits between countries. In particular, four ‘modes of capitalism’ are illustrated, with a specific division between market and non-market coordination. The weight of the evidence suggests that the varieties in economic models captures important difference among political economies. These facilitate context and define robust institutional difference which gives legitimacy to the efficacy of this study’s approach. At its general level, these results indicate the importance of diversity. Countries do not cluster around a specific variety of capitalism or an economic model. This overall finding has different dimensions which is covered under the following sub-headings.

Variety of Approaches, Variety of Empirical Configuration

Firstly, these results illustrate that the dichotomy between market based coordination and coordination based capitalism is still an important hallmark of institutional diversity. It is found that some but not complete support for the VoC approach. Echoing earlier studies, this study detects more than two empirical types of capitalism (Esping-Anderson, 1990; Amable, 2003; Boyer, 2004; Schneider & Paunescu, 2012).

Table 7.1 Capitalist Variety versus Hall & Soskice Classification

Cluster	Country
<i>Market Based Capitalism</i>	
Neoliberal Market	<i>USA</i> <i>GBR</i> <i>CAN</i> <i>AUS</i>
Emergent Market Capitalism	<i>EST</i> <i>NZL</i>
Asian Market Capitalism	<i>KOR</i> <i>JPN</i>
<i>Coordination Based Capitalism</i>	
Scandinavian	DEN SWE NOR
Continental	AUT BEL SWI GER NED FIN
<i>Peripheral Capitalism</i>	
Franco-Lux	<i>LUX</i> <i>FRA</i>
EMU Peripherals	<i>ESP</i> <i>POR</i> <i>IRE</i>
<i>Developmental Capitalism</i>	
South American Variant	<i>CHL</i> <i>MEX</i>
Eastern European Variant	<i>HUN</i> <i>SLO</i> <i>CZR</i> <i>POL</i> <i>SLV</i> <i>ITA</i>

Bold: Economies discussed as CMEs by Hall & Soskice; *Italics:* economies discussed as LMEs by Hall & Soskice; Neither bold nor italic: Not included in Hall & Soskice classification of VoC; Classifications within clusters are defined by the cluster analysis of Chapter 5

In addition to the CME and the LME clusters, the results delineate a cluster of developmental economies, a cluster of economies that resemble the pure LMEs and a cluster consisting of heterogeneous hybrid economies. But in line with the VoC approach, it is found that a core of economies conform to the LME and CME ideal types. The institutional configurations of these economies demonstrate the patterns predicted by Hall and Soskice, with Table 7.1 illustrating where this study's findings reflect against the VoC approach. The clustering of institutions indicates that the LME–CME distinction is meaningful, albeit only for a limited number of economies and not as an exclusive dichotomy for developed economies. Furthermore, these findings demonstrate that whilst there is variety in institutional approaches, consisting of varied methodologies and definitions, the core typologies closely track and resemble those of the VoC approach. For example, where Schneider & Paunescu (2012) operationalise different variables for their empirical work, they find some support for the VoC assessments. Likewise, where this thesis has taken inspiration from the Governance Approach (Amable, 2003) to comparative institutionalism, the core dichotomy between market and non-market clusters are still valid. This shows validity in the core variety dimension and that institutional change is apparent, but gradual.

Varieties of Capitalism and Comparative (Dis)advantages

Also consistent with the VoC approach, these results show, ex-post objective 1, that this studies institutional configurations pertinent to those akin to Hall & Soskice's (2001) LME and CME classifications afford substantial comparative advantage, compared with the relative comparative disadvantage of those configurations not marked by the market/non-market dichotomy. Economies that do not conform to either the LME or the CME models, do not show comparative advantages in terms of aggregate entrepreneurial

performance. This lends direct support to the implication that models of capitalism are marked by either consistency (LME, CME), or inconsistency - those models "that may get stuck in the middle" (Schneider & Paunescu, 2012, p. 747). Despite considerable pressure for convergence and approaches to methodological conclusion, an important link between institutions, their complementaries and certain comparative advantages claimed by the founding scholars of comparative institutionalism is largely discernible. This echoes similar claims defined by the work of Allen et al (2006), Schneider & Paunescu (2012) and Akkermans et al (2009) who find support for the comparative advantage/disadvantage functional claims of varieties in capitalism. In sum, these findings imply that comparative institutionalism approaches to 'diversity' phenomena present an appropriate methodological framework in which international comparisons of innovative and aggregate activity can take place.

Persistence of Cross-National Divergence

Thirdly, the weight of this thesis evidence suggests that comparative institutionalism captures important differences among political economies. The concepts of market-orientated and strategic coordination do seem to reflect an underlying dimension distinguishing practices across countries in the sub-spheres proposed. Persistent cross-national differences in institutional practices in the face of intense convergence pressures suggests that, despite some liberalisation in coordinated market economies (in the face of European Union pressures for example), the distinctions central to comparative institutionalism studies are likely to be of continued value and thus worthy of continued discussion on institutional change and reform. This thesis obtains support for stability or the non-convergence hypothesis of VoC. Most continental European countries remained different from American capitalism or they did not converge to the

Anglo-Saxon type of capitalism. These countries tend to maintain their capitalism types and institutional characteristics over time despite recent structural changes, globalization, and rising inequality worldwide. This pattern may have been caused by the relatively strong institutional complementarity and path dependency associated with the long history of capitalism in these European countries.

Tiers in Capitalist Diversity

Furthermore, this research provides the post-VoC narrative urged by several scholars (Beiling, 2014; Hancke, 2009). This research is the first to validate and highlight varied ‘tiers of capitalist diversity’, where the dominant theme within the comparative capitalism literature is to emphasise varied modes of coordination (Hall & Soskice, 2001; Crouch, 2005b) rather than the rich intra-diversity within them. In sum, two tiers of capitalist diversity can be highlighted. Firstly, institutional diversity remains in terms of countries coordination mechanisms named ‘mode of capitalism’. Four variants are found. The second tier embodies ‘intra-variance’ within each capitalist regime, demonstrating internal variance within each mode of capitalism. These results show nine variants of capitalism. The weight of the evidence suggests that the varieties in economic models captures important difference among political economies. The concepts of market-orientated and strategic coordination do seem to reflect an underlying dimension practices across countries. The contention that institutional complementarities operate across political economies is borne out by the evidence. Persistent cross-national differences in institutional practices in face of convergence liberal pressures, suggests that, the distinctions build upon coordination are likely to be of continuing value.

7.2.2 Institutional Diversity, Functional Equivalence & Aggregate Entrepreneurship

Most importantly, these novel classifications of institutional diversity has important implications for comparative international entrepreneurship. Chapter 6 was interested in understanding the effects of the empirically validated institutional diversity on aggregate entrepreneurship. As such, it was found that:

Institutions affect aggregate levels of entrepreneurship. When complementary institutions are present across the sub-spheres of the political economy, rates of Total Entrepreneurial Activity are higher. Institutional diversity identified by this specification appear to offer unique explanations of cross-national levels of entrepreneurship

The main finding with regards to Chapter 6 is that institutions have a significant impact on the prevalence and nature of entrepreneurship. That is, institutions and institutional diversity can help explain the cross-national variances in aggregate levels of entrepreneurship. Explanations of the effect can be best seen where complementary institutions are present across the sub-spheres of the political economy. Institutional diversity from the regard that it can be explained from the variance of institutional complementarities highlighted in the foregoing discussion appear to offer unique explanations of cross-national levels of entrepreneurship. The mechanisms through which the influence of institutions is manifested were found to be similar in all countries; that is, by the coherence of the institutional complementarities. These findings again can be broken down into subsequent discussions.

A Configurational Approach to Institutions

It is demonstrated that joint institutional configurations of institutional sub-spheres offer more explanatory power than examinations of their individual effect. The configuration perspective enables greater integration of research on ‘specified’ institutional sub-spheres, or the New Institutional Economics mix of formal and informal institutions, and thus transcends the theoretical debate on whether one institutional sub-spheres is more important, or whether formal or informal institutions are more important for certain outcomes. Despite wide acknowledgement of the importance of the institutional setting for entrepreneurship, the commonly used approach in empirical literature is to test the impact of different types of institutional characteristics on entrepreneurship against one another to identify the most relevant institutions. The findings therefore offer a wider perspective by demonstrating that institutional sub-spheres can also have additive and mutually reinforcing effects through the interdependence of complementarities, as called for by Herrmann (2019).

From this regard, these results compliment previous work underscoring the important relationship between institutions and entrepreneurship. This study has been able to extend and deepen the understanding of this relationship by demonstrating that these institutional arrangements have varying influence on the rate of entrepreneurial activity, testing and confirming the original conjecture of Baumol (1990) who advanced that institutions are likely to affect the allocation of entrepreneurial activity in varied ways. In addition, this study also compliments the emerging body of work employing institutional theory as a fruitful parsimonious theoretical frame from which to examine the nature of social and economic action.

Through the Lens of Policy

Again, both policy-makers and scholars have considerable interest in understanding the variance in entrepreneurship within and between countries. This study advances a multidimensional measure of country level institutional environments and investigates its relationship within the rates of entrepreneurial activity. Here, the results underscore the variance between various institutional arrangements and the aggregate rates of entrepreneurial activity. From the perspective of policy, this illuminates novel and interesting policy discussion. If policy-makers are keen to merely increase the rate of entrepreneurial activity in a country, these findings suggest that their emphasis should be on establishing the ‘right’ institutions and ‘right’ institutional mix. The multidimensional measure of country-level institutions reveal a more nuanced relationship between institutions and entrepreneurship, especially where institutional constellation are commensurate to increasingly dynamic and coherent institutional complementarities. That is, policy measures designed to enhance entrepreneurial ventures started in a country would be well served to focus efforts on understanding the current institutional form, how they interact to underpin a complementarity matrix, and then how policy can reinforce the functional interactions between those institutions. This adds further context to the claims that *well-functioning national institutional frameworks* underpin rates of entrepreneurship (Stenholm et al, 2013).

Differently, a fuller picture of the institutional structure of a country is needed for reform agendas to be successful. These findings argue that policies aimed at altering a particular institutional constraint are unlikely to be sustainable in the long run because such approaches neglect complementarities and functional interdependencies among institutions. Thus, if other institutions are not supportive of a newly implemented institution, such an institution will be more difficult to maintain. As such, the findings

illustrate the necessity of identifying entrepreneurship policies that correspond to the diversity of institutional structures. Those seeking to understand the economic impact of institutions should pay careful attention to the potential for institutional complementarities across sub-spheres of the political economy. Common wisdom has been to propose reforms based on empirical evidence about the effects of reform that consider data only for the sub-sphere being reformed.

Chapter 6 was also, in parallel, concerned with understanding whether perspectives from comparative institutionalism explain the divergent nature of entrepreneurial activity across nations. It was found that:

Institutional diversity is a key driver of varied aggregate entrepreneurial rates. Specifically, the level of entrepreneurial rates is driven by the degree of institutional coherence of the political economy. This implies that aggregate economic performance is estimated to be higher in nations whose institutionalised practices correspond more closely to the coherent types of market-based and strategic coordination models of capitalism.

These findings draw attention to arguments concerning the degree to which countries institutional frameworks need to be closely complementary and institutionally coherent to allow for greater firm and entrepreneurial activity. In particular, these results show the higher aggregate entrepreneurial performance of a country is positively linked to the overall coherence of the institutional environment. The closer individual institutions are complementary to one another, hereby providing a coherent model of capitalism, the higher the rates of entrepreneurial activity. This provides a novel contribution to explaining divergent rates of entrepreneurial activity through an institutional based perspective. Where current studies have tended to emphasise the influence of individual institutions regardless of how they mould and link with other institutions to provide the

institutional environment, these results show that accounting for the interconnectedness of institutions matters. This overall finding can be broken down into discussions of coordination and the synthesis between coherence and performance.

Coordination & Complementarity as a Determinant Function for Aggregate Entrepreneurial Performance

The institutional perspective adopted in this study provides important theoretical insights to explain how institutions matter. This explanation is rooted in one of the key contentions of comparative institutionalism, that the presence of institutional complementarities appear to offer general efficiencies to economic agents. It is from this context that institutions become influential in organising economic activities and regulating economic exchange. This dichotomy is the basis for the consideration of one fundamental dimension separating the different national production systems, namely coordination. Such analysis is built on the core contention of comparative institutionalism, that developed countries differ from one another according to the degree and composition of their market/non-market coordination.

The concept of institutional ‘coordination’ stems from the competing relationships between the need to overcome principal-agent relationships and market imperfections to coordinate economic agents in an equitable and efficient manner. This degree of coordination is underpinned by the concept of institutional complementarities, where these results infer specific constellations of coordination patterns, underlining the importance of institutional diversity. It is from this departure that these findings make novel and informative contributions.

Suggestions that liberal economies marked by a high degree of market coordination offer the ‘best’ national institutional setting for entrepreneurial and innovation activities (i.e. Mair, 2010; Shaw & de Bruin, 2013) are not supported by these results given the headline finding of:

When complementary institutions are present across the sub-spheres of the political economy, rates of Total Entrepreneurial Activity are higher. Institutional coherence identified by this perspective appear to offer general efficiencies

This study highlights that the rates of entrepreneurship is not only determined by ‘institutions’ as is commonly suggest in existing comparative international entrepreneurship literature, but the degree to which various institutions interact to underpin the overall coherence is a driving force of aggregate economic performance. The greater degree of institutional coherence as defined by the closer complementarity sets of market and non-market coordination, the greater the aggregate levels of entrepreneurial activity across the panel set. In this regard, it can be suggested that institutions function differently in different national contexts, therefore infer equifinality, and consequently their influence with the presence of potential competing institutional logics. The mechanisms through which the influence of institutions is manifested have been found to be similar across the sample; that is, by determining transaction costs through the nature of coordination; through the function and strengthening of institutional complementarities (Hopner, 2005), and thus influencing the state of economic inputs for entrepreneurial general efficiencies. However the outcome of institutions were shown to vary with respect to the national institutional context, given the institutional make-up of varied models of ‘diverse but coherent’ capitalist models. Variation between said country’s institutions may have a significant impact on a country’s ability to outperform its peers.

In particular, purer coherent models will be better for entrepreneurship compared to hybrid models for several suggested reasons. In particular, greater institutional coherence promotes spillovers to further increase the benefits from institutional complementarities, increasing the agents ability to exploit the benefits yielded by the coherent complementarities (Hopner, 2005). Incoherence through the hybrid models creates frictions which allow effective coordination, given the complementarities exhibit inconsistencies and contradictions in their institutional logics. For example, developmentalist and peripheral models have some coordination features in the form of rigid labour markets, yet coupled with decentralised wage bargaining systems. The system integration is process of overlapping market and non-market logics, making institutional complementarities difficult to build, promoting weakened allocative efficiencies and instability (Amable, 2009).

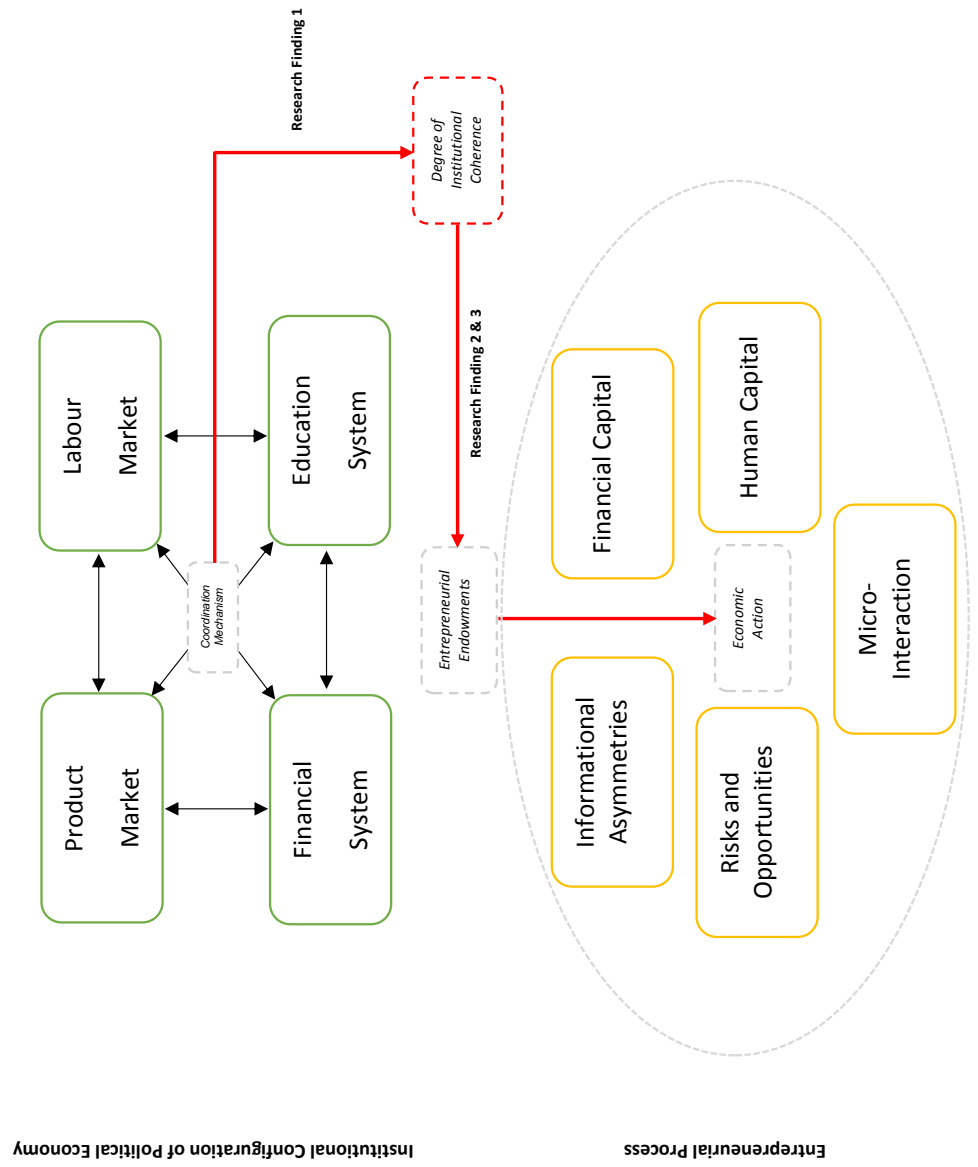
Further, hybrid models revolve around states overcoming the weak institutional calibration by providing the correction of coordination failures brought about by competing institutional logics and incoherence. A pervasive state is therefore a process of non-market coordination. With a mix of state and market interaction resulting in a dominant form of coordination means that interaction between entrepreneurs and the market becomes weakened (Baumol et al, 2007; Molina & Rhodes, 2007). This perpetuates longer term unstable and inefficient equilibriums, making it less conducive for the private sector, the context of the entrepreneur, to develop and grow.

Empirical validation of institutional diversity, complementarities and as such the dynamic intricacies between coherent functional equivalents can render further adaptation of the theoretical and empirical framework proposed in Section 3.7. As argued by Yeung (2002), variations in institutional structures and political economies significantly explain the sources and variation of resource and capability endowments leveraged

by entrepreneurs. The structure of institutions produce distinctive forms of economic organisation. This is modelled in the ‘institutional configurational’ framework of Figure 3.1 (Section 3.1), where the key emphasis has been to empirically gauge the ‘diversity in structures’ within the political economy. Given this models the ‘supply-side’ of the political economy, the impact of institutions runs through its impact on entrepreneurial endowments. The nature of this study’s findings illuminates the mechanism from which the configuration of institutions leverage’s general efficiencies for aggregate entrepreneurship. Figure 7.1 defines how the objectives research findings informs the theoretical framework.

Overall, one can argue that coherent models are better for entrepreneurship than incoherent, hybrid models because of (1) greater efficiencies from institutional complementarities and therefore greater logical provision of endowments, and (2) a pervasive state directions production, regulation and correction of coordination failures, which is less conducive for private enterprise. This in turn would show on the aggregate scale.

Fig. 7.1 Institutional Environment and Entrepreneurship: Findings



7.3 Contributions to Theory

"Principally, all management scholars aspiring a theoretical contribution should be concerned about context"

(Meyer, 2015, p. 369)

This study contributes to theoretical contributions. As such, the following subsections will divide out and explain the theoretical contributions in (1) comparative international entrepreneurship, involved with trying to understand environmental antecedents and the cross-national variance of entrepreneurial rates; (2) the literature on national institutional systems and general macroeconomic performance; (3) debates around the significance of institutional coherence; and (4) the field of comparative institutionalism/capitalism, largely involved with highlighting intricacies between varied political economies.

With reference to the contributions to *comparative international entrepreneurship*, present entrepreneurship literature has yet to truly approach institutional analysis from beyond the attention of new institutional economics with fresh perspectives from socioeconomics. Furthermore, present institutional analysis often takes institutions as 'outcome variables' rather than observing the institutions as configurations and constructs themselves (Estrin et al, 2013; Glaeser et al, 2004). As such, this study intended to mirror the thoughts of Jackson & Deeg (2008) and Lim et al (2010) by bringing 'political economy into the study of international entrepreneurship' with insight from the comparative institutionalism literature, specifically Amable's (2003) 'Governance approach'. Hereby, this study introduces a fresh theoretical perspective, namely an 'institutional configuration' approach, enabling greater integration of research

on institutional singularity and thus transcends the present theoretical debate on whether formal or informal institutions are more important for certain outcomes within international entrepreneurship and business research. Theorizing and testing effects of institutional configurations is an established practice in other disciplines (e.g. business strategy), but has received little attention in comparative entrepreneurship research.

These findings contribute in the sense they demonstrate that joint institutional configurations of institutional sub-spheres offer more explanatory power than examinations of their individual effects. The configuration perspective enables greater integration of research on institutions and their complementarities, thus transcending the theoretical debate on whether certain institutions are more important for certain outcomes in comparative international entrepreneurship research. Theorizing and testing the effect of configurations is an established practice in such disciplines such as psychology (Short et al, 2008), but has received little attention in institutional theory (Scott, 2005; Amable, 2003), particularly in its application to comparative entrepreneurship research (Bruton et al, 2010; Stephan et al, 2015; Jones et al, 2011). In this vein, comparative international entrepreneurship research has executed empirical models with a parametric linearised specification, which by definition, assumes there maybe a ‘one-best-way’ for institutions. This research has empirically validated quadratic models which builds on present international entrepreneurship research to justify the functional equivalence of institutions in and for entrepreneurship.

The configurational logic considers the bundle of attributes in institutional domains, as opposed to the isolated effects of those attributes on codes features. Institutional domains capture the ‘structural’ variations across countries in how the ‘agents’ they represent interact with one another (Giddens, 1984), and within the studies context, in decision-making over the features of codes. Thus, the mechanism of complementarity

draws on the notion of ‘systemic fit’ (Drazin & Van de Ven, 1985) where attributes of the various institutional domains can complement one another in the way they interact and relate to an outcome. The concept of institutional complementarity refers to situations in which the impact of an institutional form is conditioned by other institutions (Crouch et al, 2005). This has clear implications for the study of comparative studies of international entrepreneurship.

This study’s configurational approach also reveals that a given economic outcome can be reached via different combinations of institutional domains. This highlights the distinction between the adoption of a best entrepreneurial policies and the achievement of a desired economic outcome, stressing the context-dependent contingency of diffusion of activity around the world. Indeed, the fact that the study demonstrates empirical evidence for equifinality in economic outcomes shows that the comparative international entrepreneurship literature’s focus on the singularity of institutional effect may underestimate that different countries can reach the same result through the combination of different institutional structures. This equifinality speaks to debates on convergence across national institutional systems (Rasheed & Yoshikawa, 2012; Haxhi & Aguilera, 2017), since the possibility of multiple paths to the same outcome might facilitate divergence, generated by the presence of alternative, non-competing configurations. Such insight offers a novel critical view of the institutional literature on cross-national entrepreneurial literature, which currently does not explicitly distinguish between ‘different mechanisms’ to reach a given outcome (Herrmann, 2019). Similar to the arguments of Bruton et al (2010) and Lee et al (2007), the heterogeneity among the decision sets available to entrepreneurs in different countries goes a long way towards explaining their contingent behaviour and subsequent economic outcomes.

Building on the comparative institutionalism approach, these findings help to advance the theoretical basis for entrepreneurship research on institutional complementarity, suggesting that entrepreneurship is high when the coordination of both market based activities and strategic coordination are driven by dominant institutional coherent logics.

With reference to *national institutional systems, configurations and aggregate economic performance*, this study's contribution helps illuminate "research linking institutional differences to specific economic outcomes" which "has remained surprisingly underdeveloped" (Witt & Jackson, 2016, p. 780). This thesis contributes to the literature on country level performance by structuring, testing and validating a comprehensive taxonomy of institutional systems and demonstrate that the configurations provide an independent and statistically significant explanation of the variation in economic performance across countries. Thus, this research shows that these configurations matter in explanations of economic performance (as measured by TEA) and thereby contribute to this parallel line of research by addressing the concerns of scholars that research has given more attention to the task of critiquing institutional typologies rather than testing the frameworks (Peck & Zhang, 2013; Carney et al, 2018; Jackson & Deeg, 2019).

Secondly, this research sheds light on the kinds of institutional arrangements that will support better economic performance. With its portrayal of path-dependant institutional change, the comparative institutionalism literature has emphasised institutional continuity and the persistence in the variety of capitalist structures (Hall & Thelen, 2009; Jackson & Deeg, 2008). With economic performance central, through a entrepreneur-centered approach such as this research, can inform debates about the evolution of institutional systems and the "incremental institutional adjustments

and potential hybridization" (Jackson & Deeg, 2008) that may emerge over time. Nonetheless, these results are commensurate with Amable (2003) who argues that "institutions define incentives and constraints that will lead agents to invest in certain assets, acquire certain skills, cooperate, or be opportunistic. These individual decisions *will affect the macroeconomic performance*". Where Amable's (2003) conclusions were not based on empirical evidence, this studies results do go some way to validate his initial causality links.

The study's results also illuminate these debates by suggesting a range of distinctive trajectories of institutional change and economic performance. These results point to two relatively high-performing configurations, versus relatively poorer performing institutional systems. This characterises the developmental trajectories of both configurations in dynamic terms where relatively highly coherent political economies are proactive in building further/tighter complementarities to address institutional contradictions, seeking to further maximise their institutional coordination coherence (market and non-market coordination). As argued by Sinkovics et al (2014), in the settings where markets and other selection mechanisms are intensified and domestic firms are incentivised to adapt and improve their strategies, higher levels of performance can be achieved. Indeed these results validate such theory, given that incoherent models of capitalist are characterised by institutional voids and inconsistencies for which incentivises firms/entrepreneurs to bypass formal structures.

This leads to a third contribution in the form of validating the work of Schneider (2009) and Wood & Frynas (2005) whom identify economic systems characterised by institutional inertia and therefore failure. It has been argued that these institutional settings may have become permanently settled into their foundations with the preservation of institutional contradictions and non-complementarity. This studies results identify

two under-performing configurations, stylised by low institutional coherence. These are theoretically economic systems with weak states that lack the capacities and/or willingness to furnish resources or otherwise overcome institutional voids. As borne out in these results, these countries are very unlikely to achieve coherent complementarities and thus relative levels of aggregate performance. Put differently, echoing the work of Hall and Gingerich (2005), the absence of institutional ‘complementarities’ identified by this work fail to appear to offer general efficiencies relative to their presence.

Thus, accounting for institutional configurations regarding aggregate economic activity suggests evidence of both institutional convergence and persistence, alongside pointing to the possibility of hybridized forms of capitalism failing to promise equal or improved levels of entrepreneurial and macroeconomic performance. From this perspective, these results contribute to the questions of institutional ‘equifinality’ and functional equivalence, confirming the hypothesis that activities in different institutional configurations (and thus coherence) will operate with varied levels of economic performance.

In turn, with reference to *institutional coherence*, this research raises the dichotomy that for economic performance outcomes, the decisive question for national economies is not ‘Which cluster of economic model are you in?’ but rather ‘How coherent are your institutions?’. The notion of institutional coherence (Kenworthy, 2006) refers to complementarities, order and consistencies between the earlier noted four institutional sub-systems of political economies. As argued, institutional complementarities refer to functioning wherein "the presence (or efficiency) of one institution increases the returns from (or efficiency of) the other" (Hall & Soskice, 2001, p. 17). Above all, the institutional coherence between those elements provide comparative advantage to the economy (Kenworthy, 2005; Hall & Soskice, 2001).

Yet intellectual tension exists between those who see national institutional incoherence as a comparative disadvantage to said economies (Allen, 2013; Hall & Gingerich, 2009; Schneider & Paunescu, 2012) and those who refute institutional coherence as a necessary or sufficient condition for comparative advantage of said economy (Kenworthy, 2006; Witt & Jackson, 2016; Lane & Wood, 2009; Malik, 2017). The core issue in this divide is whether institutional coherence is a driver in comparative advantage and propensity of economic action.

One side finds institutional coherence crucial for economic performance. The institutional coherence of, to borrow the typologies of Hall & Soskice (2001), the LME is seen as favourable for radical innovation, whereas coordinated market economies (CME) has the institutional coherence required to support incremental innovation. This is supported by a small pool of empirical studies of national performance regarding export performance (Allen et al, 2006; Schneider et al, 2010), patents (Akkermans et al, 2009) and GDP growth (Hall & Gingerich, 2009).

The opposing arguments suggests that institutional coherence is neither necessary nor sufficient. External shocks and internal sector-level diversity can reduce the institutional coherence of political economies. Some studies show that national economies achieve comparative innovation performance without conforming to the institutional coherence hypothesis (Walker et al, 2014; Nolke & Vliegenthart, 2009; Witt & Jackson, 2016; Malik, 2017). At a disaggregated level, Allen et al (2006) and Mudambi (2008) find that some firms in LMEs are producing incremental innovation and some firms in CMEs are conducting radical innovation. This evidence reduces the support for the central role of institutional coherence in political economies.

These views argue against the role played by institutional coherence in supporting specific economic logics. However, this debate has left several voids unanswered. The institutional coherence debate is largely a new and underdeveloped pool of literature. There is underdevelopment in terms of empirical methodologies employed, ways in which economic performance is measured and the focus of fixed categories of capitalism (i.e LME, CME, MME) based on data from 19 (Hall & Soskice, 2001), 22 (Akkermans et al, 2009; Allen et al, 2006) or 26 OECD countries (Schneider & Paunescu, 2010). Studies often treat these as binary classification rather than the 'spectrum' between political economies within and between capitalisms. As Becker (2009, p. 8) powerfully argues a similar point with respect to the OECD-based critiques of VoC: "The confusion produced by the typological discussion is remarkable... It stems from the conflation of ideal types and classifications as well as of types and cases (given political economies)". Hence, the question in comparative capitalism literature should research the agenda of 'to what extent' a given economy exhibits features approximate to ideal types. As Hall & Gingerich (2009) argue, "it is the variation along a spectrum running from coordination to coordination" that should be examined, and not merely the pursuit of political economic 'templates'. This has important implications for the empirical identification of economic models and their pertaining comparative advantages reflected in their aggregate economic performance.

This research provides fresh contributions to this growing debate. It can be seen that, between the spectrum of economies represented by their institutional configurations, institutional coherence is an important driver of aggregate performance, measured in terms of TEA. Methodologically, this study represents a more comprehensive approach than previous studies given, (1) A larger amalgamation of institutional factors, (2) The use of panel methods to validate across time and control for various specifications, (3) A spectrum approach to institutional economies models and institutional coherence, vis-a-

vis a binary approach of some studies, (4) measurement of ‘functional complementarities over ‘descriptive similarities’, (5) an attempt to move beyond the VoC ‘envy’, yet still anchored to the institutional coherence debates of set complementarity configurations and (6) a focus on variation in degree rather in kind across economies.

These results do indeed raise the issue of rather than merely analysing ‘which’ model of capitalism are you, but rather ‘how’ coherent are your institutions?

Alongside contributions along the avenues of *comparative international entrepreneurship*, *national economic performance* and *institutional coherence*, this study contributes in relation to *comparative institutionalism & political economy*. This research has developed a quantitative assessment of capitalist diversity with the inclusion of original factor components and the addition of new countries yet to be included in the comparative capitalism literature (therefore of interest for comparative international entrepreneurship research). These results find that from the 13 factor components developed, 4 clusters of ‘inter-variance’ of capitalism (the coordination mode) and 9 ‘intra-variants’ of capitalism (intra-modes) are present. The principal components analysis (PCA) extends across four institutional spheres as distinguished by the underutilised ‘third prong’ of the comparative capitalism literature, the Governance Approach (Amable, 2003; Boyer, 1986). This provides the post-VoC narrative urged by several scholars (Beiling, 2014; Hancke, 2009). This research is the first to validate and highlight varied ‘tiers of capitalist diversity’, where the dominant theme within the comparative capitalism literature is to emphasise varied modes of coordination (Hall & Soskice, 2001, Crouch, 2005b) rather than the rich intra-diversity within them. It is also the first to include wider measures of the product market and education system.

The results find some but not complete support for the VoC approach. Echoing earlier studies, our results detected more than two empirical types of capitalism (i.e. Amable, 2003; Witt et al, 2018; Schneider & Paunescu, 2012). In addition, it is found that the qualitative assessment provided by Hall & Soskice (2001) are largely accurate, the dichotomy between liberal (LMEs) and coordinated market economies (CMEs) remains given our established ‘inter-variance’ of capitalism. Nonetheless, there is convincing internal variance within each coordination mode of capitalism that provides ‘institutional complementarity’ logics contrasting atypical LME-CME complementarity architectures. For example, internal variance within the market based coordination mechanism is chiefly dictated by diversities between financial systems. While the neo-liberal cluster (UK, USA, Canada, Australia) provides the predicted ‘short-termism’ capital akin to the LMEs theory, the emergent liberal model and to a lesser the Asian model is characterised by more ‘patient-led capital’ systems analogous to the CME theory. However, the clustering of institutions indicates that the VoC LME-CME dichotomy is still meaningful, albeit limited to a number of economies and not as an exclusive capitalist diversity framework for comparative research such as comparative international entrepreneurship.

More importantly, this study establishes additional institutional measures. Much of the quantitative focus of comparative institutionalism literature has been made around the use of single indicators to measure underlying institutional structures. This provides a ‘rough’ estimate of a given institution, especially given the perceived latency of such institutional logics. The factor and cluster analysis provides a ‘thicker’ analytical approach underdeveloped to date. The depth of institutional measurement is a concerning weakness in previous studies, with this study contributing to the quantitative rigour of the literature. As such, one is able to portray institutional configurations with a richer and purer objective foundation.

In sum, this thesis builds up nuances and extends previous work on Comparative Capitalism (Amable, 2003; Boyer, 1997; Jackson & Deeg, 2006; Whitely, 1992), by going beyond the VoC (Hall & Soskice, 2001) dichotomous one-dimensional view and advocating an institutional complementarity approach. Specifically, these findings extend on Amable's (2003) research along three main dimensions. First, in addition to identifying institutional complementarities, it is shown that different configurations of institutions stemming from different institutional complementarities generate similar outcomes with respect to the cross-national diversity in economic activity. Thus, unlike Amable's perspective, which starts from mechanisms that lead to different types of Capitalism (i.e., multifinality), this studies approach shows that the same outcome (i.e., Type of Capitalism) might emerge from different configurations of mechanisms (i.e., equifinality & functional equivalence). Secondly, focusing on institutions rather than on the way institutions contextually interact with each other, as Amable (2003) takes, leads to the conclusion that an institution will always impact the considered outcome. The hypotheses show that the same institutions can impact an outcome differently, depending on its interactions and configuration with the other institutional sub-spheres. Third, Amable (2003), by focusing on one mechanism for each type of institution and idealisation of types, makes the implicit assumption that the non-salient features of models simply disappears from any rich contextualisation and definition of economic models.

Methodologically, it is challenging to study cross-national empirical governance research due to the complex configurational, institutional relationships and functional overlaps within a relatively small set of comparable countries. By developing and testing an institutional configurational approach, this study further contributes to a significant insight for empirical configurational research. Whilst an 'institutional configuration' can provide novel insights into explaining cross-national diversities in

economic activities and performance, "the progress of empirical research has been less than satisfying" (Fiss, 2007, p. 1180; Haxhi & Aguilera, 2017). This study employs a rigorous empirical methodology to test the configurational perspective, which is attractive conceptually but more difficult to test empirically. In doing so, the factor, panel analysis and complementarity term' approach generates important insights for both the comparative institutionalism and international entrepreneurship literature, as it draws on data from over 28 countries, thus contrasting with typical studies that are based on a significantly smaller sample of countries. This again moves the comparative institutionalism literature on from the preoccupation with 'ideal types' to a broader and more fruitful lens of 'to what extent' a given economy exhibits. Differently, neglecting the conceptualisation of complementarities as a spectrum, the literature forecloses the opportunity to examine the most pertinent question, namely, does the variety of institutions influence a given economies performance (or other output variables)? A way to forward this agenda would be to generate comparative 'distance' measure that are comparable across economies, of which is at the heart of this thesis. This has also been echoed by the latest work of Jackson & Deeg (2019).

By examining the effect of different institutional attributes, this study generates a number of important policy implications from the perspective of political economy. The empirical analysis also shows the continued importance of countries as a grounding unit of analysis, despite wide transnational regulatory pressures (Djelic & Sahlin-Andersson, 2006). There is evidence that EU harmonization efforts towards a transnational code and an overall EU governance policy have not yet succeeded (Amable, 2009). This might be in part due to the diversity of institutional domains and that their complementarities are context-specific, as we have demonstrated with institutional attributes forming different configurations.

Finally, while national institutions typically change at a slow rate, research has shown that institutional change does occur (Gingrich, 2015; Taras et al, 2012). As such, older typologies can become outdated as the institutional system shifts over time, largely due to external sources (Hotho, 2014). By drawing on current data coupled with a broader consideration of institutional context and theory, this study is able to refine and extend prior typologies and begin to consider a more deductive approach to comparative capitalism. According to Hotho (2014), such a taxonomical approach may stimulate the conceptual refinement of existing typologies and classifications. The transitory nature of world economies entails that snapshot taxonomies and typologies require suitable revisiting and updating. Whilst these results do not render key ‘older’ frameworks redundant (but rather support them), the work here does highlight the finer grained rich variety of certain political economies.

In sum, this research contributes to the key themes of comparative institutionalism, where such literature shows how countries differ (Hotho, 2014), where these support the view that varieties in institutional settings lead to different kinds, levels and advantages to economic actors (Allen & Whitley, 2012).

7.4 Contributions to Public Policy

In many countries, creating institutional framework conditions that are conducive to entrepreneurship are a well-established objective of the policy agenda. A main motivation behind the attempts of creating a more entrepreneurial society and entrepreneurship friendly institutions is the recognition that entrepreneurship is an important driver of economic growth. It is therefore imperative that the implications for public policy are

discussed. In particular, this section extends upon the core results to illustrate important contributions in light of institutional coherence and the dynamics of institutional change/structural reform of highly calibrated institutional configurations.

On one hand, institutional complementarities explain the emerge and persistence of different varieties of capitalism and multiple equilibria. On the other hand, they partially condition the available possibilities for institutional change, as some institutions interlock with others and affect the costs of transiting in and out of a particular institutional landscape. As such, the nature of institutional complementarities and the coherence they exhibit underlines important implications for public policy involving institutional adaptation and change.

7.4.1 Structural Reform and the (in)coherence of institutions: *Implications for ‘How Governments Should Reform’*

Contradictions in the institutional complementarities can pose considerable frictions and inefficiencies for economic actors by undermining the coherence of the political economy. This has implications for how governments should go about adjusting the structures of their institutions in order to support entrepreneurship.

Despite wide acknowledgement that the institutional setting is important for entrepreneurship, the commonly used public policy approach is identify the most relevant institutional area to ‘reform’ in a liberal direction. However, this approach ignores the ‘fuller picture’ of the institutional structure of a county. This research suggests that entrepreneurship policies aimed at altering an institutional constraint are unlikely to be a sustainable public policy in the long term. This is because such approach

neglects the complementarities among institutions and the ultimate configuration of institution which underpins the specific logic of a political economy. As such, any neighbouring institutions not supportive of a newly reformed institution will reduce the effectiveness and efficiency of reforms. These empirical results are illustrative to the fact that there is no one-size-fits-all approach to create an entrepreneurial ‘society’ and proposes policy implications for how governments should go about adjusting the structure of their institutions in order to stimulate entrepreneurship.

The underlying complementarities among the sub-systems of political economies pose insightful perspectives when designing adequate entrepreneurship policies, given they need to be incentive compatible with these forms of functional complementarities. Given entrepreneurship is to be viewed as an institutionally embedded, historically specific phenomenon, thus requires policies that account for these specificities and systemic features of the institutional environment. Differently, first-best economic principles—such as the protection of property and contract enforcement—do not map onto unique policy packages; there is no unique correspondence between well-functioning institutions and the form that such institutions take (Berkowitz et al, 2003; Djankov et al, 2003; Evans, 2004; Mukand & Rodrik, 2005; Dixit, 2007; Rodrik, 2007a).

Dynamic Reformation, Restructure & Complementarities of Formal Institutions: *Structural Reforms and the Coherence of Institutions*

Political economies with particular types of institutions in one sub-sphere tend to have particular types of institutions in other sub-spheres. Therefore reforming a particular institution in a uni-direction should account for the interactions and functionalities between other institutional sub-spheres commensurate to the mode of capitalism.

The broader lesson is that those seeking to understand the effects of institutional change should pay careful attention to the potential for institutional complementarities across sub-spheres of the political economy. Most proposals to reform institutional sub-spheres, whether that be for entrepreneurship or general structural reform, are based on estimates of the effects of such reforms that consider data only for the sub-sphere being reformed. If the distribution of institutions across political economies were random, estimates generated from data of this sort might produce ‘accurate’ results. But the evidence generated in this thesis indicates that this distribution is far from random - political economies with particular types of institutions in one sub-sphere tend to have particular types of institutions in other sub-spheres. As a result, models that do not take interaction effects across institutional sub-spheres into account may attribute to one set of institutions effects that are actually generated by interaction with other sub-spheres of the political economy.

In short, because institutions in developed political economies are interrelated through a complex network of complementarities, institutional change (to increase the marginal returns to economic activity) has consequences beyond the area concerned in reform. This also implies that there are complementarity effects in structural reforms themselves (Amable, 2013). A consideration and challenge of reform programmes is, therefore, to achieve and/or strengthen the types of complementarities between institutions. The general orientation of structural and economic reform has been a move towards liberalisation in the direction of market-based coordination. This has been the norm for entrepreneurial reform, particularly in relation to literature discussion around ‘building an entrepreneurial society’ (Dilli et al, 2018). However, the empirical tests do not wholly support such reforms.

Firstly, reform in one institution will have impact on other interrelated institutions, thus reform such take a holistic political economy approach, and not just removing ‘frictions’ in an identified institution/area. In this way, ‘monocropping’ and supplanting institutions which may be empirically validated to produce returns, may fail to produce returns in the absence of considering the functional interactions with other institutions. Reforms in a few institutional sub-spheres cannot lead to a functionally coherent system because of the interdependence between institutions and its consequences for agents strategies.

Secondly, the implementation of some market-based structural reforms, even in conjunction with one another, may not be enough to transform political economies based on different principles into liberal market economies. Given the rich diversity between OECD economies, and the empirical suggestion of functional equivalents, forwards the rationale that reform can be against the grain of liberalisation towards market based political economies. Economic returns are increased by institutional coherence, for which means solidifying the complementarity set between institutions, for which can be in the direction of strategic (non-market) coordination. Without being too functionalist, the impression is that such a large set of inconsistencies is suggested to affect performance.

Table 7.2 and 7.3 presents the expected complementarities associated with ongoing structural reforms. This gives an illustration of the consequences of some structural reforms on the institutional coherence of political economies. These are specified in two forms for ‘institutional coherence’. Firstly to maximise coherence through market reform and secondly, reform to maximise the coherence of strategically coordinated models. Dynamic change therefore takes direction of a ‘system-reinforcing’ (Pagano, 2011) trajectory. Reforms implemented in some institutional areas (rows) will have

consequences for other institutional areas (columns). For instance, a decrease in employment protection (labour market reform) will incite workers to invest less in assets defined by high specificities, which will most likely modify the conditions under which a certain quality level can be achieved and hence product markets. As can be seen from the Tables, reforms with a particular political economic trend for reinforcing the mode of capitalism/coordination have potential implications for many other institutions, hereby defining the complementarity sets and the overall coherence of the economy, a key driver in economic performance and efficiency. It can be acknowledged that any narrative on reform for entrepreneurial societies is accounted by static rather than dynamic interdependent interpretations. The directions of the dynamic reforms (Tables 7.2 & 7.3) matches the bifurcation of returns for institutional coherence and thus economic efficiency. This infers the potential implications and destabilising effect of neoliberal structural reforms for non-liberal modes of capitalism/coordination.

Table 7.2 Dynamic Structural Reform Interaction Matrix: Increasing Coherence for Market Based Coordination

Reform Description	Labour Markets	Product Markets	Financial System	Education System
<i>Labour Market Deregulation</i>		Increasing investments in assets of low specificity; less investment in specific assets	Increased pressure on private finance in the forms of asset-backed welfare insurance	Increased demand for general skills, prevalence of academic education; less active labour market policy (ALMP)
<i>Product Market Deregulation</i>	Employment protection more difficult (Amable, 2009); less wage pressures (Hancke, 2007)		Increased demand for financial system services; increase in equity markets & variety of capital forms	Increased demand for profit built on generalised skill profiles
<i>Financial System Liberalisation</i>	Increased demand for employment flexibility and decentralised wage bargaining	Increased profitability pressures; price competition		Facilitate development of private education; increased demand for Govt support for Higher Education & research
<i>Education System Reform</i>	Pressure for decentralised wage bargaining and erosion of collective bargaining formalisation	Increased generalisability of skill profiles/differentiation	Increased demand for private financing	

Complementarity consequence of dynamic structural reform in one institutional sub-sphere (rows) for the stability of sub-spheres in other areas (columns); Source: Authors Representation, Amable (2009).

Table 7.3 Dynamic Structural Reform Interaction Matrix: Increasing Coherence for Non-Market Based Coordination

Reform Description	Labour Markets	Product Markets	Financial System	Education System
<i>Labour Market Regulation, Protection & Centralisation</i>		Increasing investments in assets of high specificity; less investment in general assets	Increased demand for patient, long term capital; Increasing demand for industrial bodies	Increased demand for specific skills; prevalence of vocational/OTJ education/training
<i>Product Market Regulation & Industrial Protection</i>	Employment protection more fluid in support of specified industrial legacies; Increased pressure on internal competitiveness and productivity whips		Increased demand patient capital as directed by industrial bodies	Increased demand for competitiveness built on specific skill profiles
<i>Financial System Protection/Prudential Regulation for Certain Activities (Contained prevalence of equity profit systems)</i>	Increased demand for employment protection and centralised wage bargaining	Increased competitiveness pressures; quality competition		Facilitate development of private sector led vocational education; increased demand for investments in skill specificities
<i>Education System Reform</i>	Pressure for centralised wage bargaining and erosion of collective bargaining formalisation to protect firms investments in skills	Less ability to adapt to consumer preferences thus quality control	Increased demand for financial system to ensure patient capital, less profit seeking; stakeholder maximisation	

Complementarity consequence of dynamic structural reform in one institutional sub-sphere (rows) for the stability of sub-spheres in other areas (columns); Source: Authors Representation

Institutional Coherence: Related Comparative Performance of Coherent Complementarities

The linearisation and estimation of ‘*institutional coherence*’ of Section 6.6.2 yield important implications for policy. The positive first order partial derivative infers that the increasing returns to institutional coherence is underpinned by the mathematical supermodular function of institutional complementarities (Topkis, 1998). As argued by Hopner (2005a), illustrations of the functional returns of institutional complementarities and their configurational effects are best illustrated through simple utility analysis. This is formally illustrated by the setting with institutional domains, A and B , and sets of agents, C and D with a hypothetical function of $u_i = u(i \in C)$ defined by choices of the complementarities between A^n and B^n . Where A^n and B^n are given by specific sets/configuration of $[IC_i]$. The differential definition is derived from the standard meaning of complementarity in economics. The marginal ‘efficiency’ of a certain institution is positively related to the presence or intensity of another institution in another area. Consider an aggregate ‘performance’ function $u(.,.)$ and two institutional domains A and B (labour market and financial system, for instance), respectively associated with specific institutional forms A and B . Given these are continuous variables, and u is differentiable given the polynomial function, the common definition of complementarity can be given as:

$$\left[\frac{\partial^2 u(A, B)}{\partial A \partial B} \right] \leq 0$$

For instance, an institutional complementarity between deregulated labour markets and deregulated product markets will mean that less regulation in the labour market

increases the *marginal gain* to deregulation in product markets. Therefore as the hypothesis goes:

$$u(A^1; B^1) - u(A^2; B^1) \geq u(A^1; B^2) - u(A^2; B^2)$$

$$u(B^2; A^2) - u(B^1; A^2) \geq u(B^2; A^1) - u(B^1; A^1)$$

The first condition implies that the “incremental” benefit for the agents in A from choosing A^1 rather than A^2 increases as their institutional environment in B is B^1 rather than B^2 . The second condition implies that the incremental benefit for agents in B from choosing B^2 rather than B^1 increases if their institutional environment in A is A^2 rather than A^1 . Differently, in order to make a meaningful comparison of institutional configurations it is necessary to have a multiplicity of viable cases. In this case, institutional complementarity would call for a situation where a multiplicity of ‘equilibriums’ is a priori possible. If it is considered that (A^1, B^1) and (A^2, B^2) are the two institutional equilibria, the comparative performance definition of ‘strong’ institutional complementarity would also demand that:

$$u(A^1, B^1) \geq u(A^1, B^2),$$

$$u(A^1, B^1) \geq u(A^2, B^1),$$

$$u(A^2, B^2) \geq u(A^1, B^2),$$

$$u(A^2, B^2) \geq u(A^2, B^1)$$

In this notion of institutional complementarity, the overall performance declines when one changes one institution, leaving the other unchanged. This introduces

another definition of institutional complementarity, related to comparative performance (Amable et al, 2005). Therefore, this infers that reform for institutional coherence will maximise the yield between:

$$u(A^1; B^1) - u(A^2; B^1) - u(A^1; B^2) + u(A^2; B^2) > 1$$

$$u(B^2; A^2) - u(B^1; A^2) - u(B^2; A^1) + u(B^1; A^1) > 1$$

The dynamic definition of institutional complementarity, as illustrated, therefore suggests that the presence of one institutional form in one area leads to the adoption of an institutional form in another area (Amable et al, 2005). These dynamic considerations raise the question of factors behind institutional change and institutional reform, as per the nature of the following sections on the dynamism of change and institutional stability.

7.4.2 Dynamic Bifurcation, Aggregate Entrepreneurship & Reform for Institutional Efficiencies: *Marginal Productivity of Institutional Change*

To empirically illustrate the marginal returns to reform for institutional coherence, one can take the marginal derivative of the polynomial function estimated in Model 4b:

Differentiate where y is a non-linear function of x :

$$y = f(x)$$

$$\frac{\partial y}{\partial x} = a + \gamma \cdot x^2$$

where γ is specified by the *IC* term pertaining to institutional complementarity. Multivariate estimation infers:

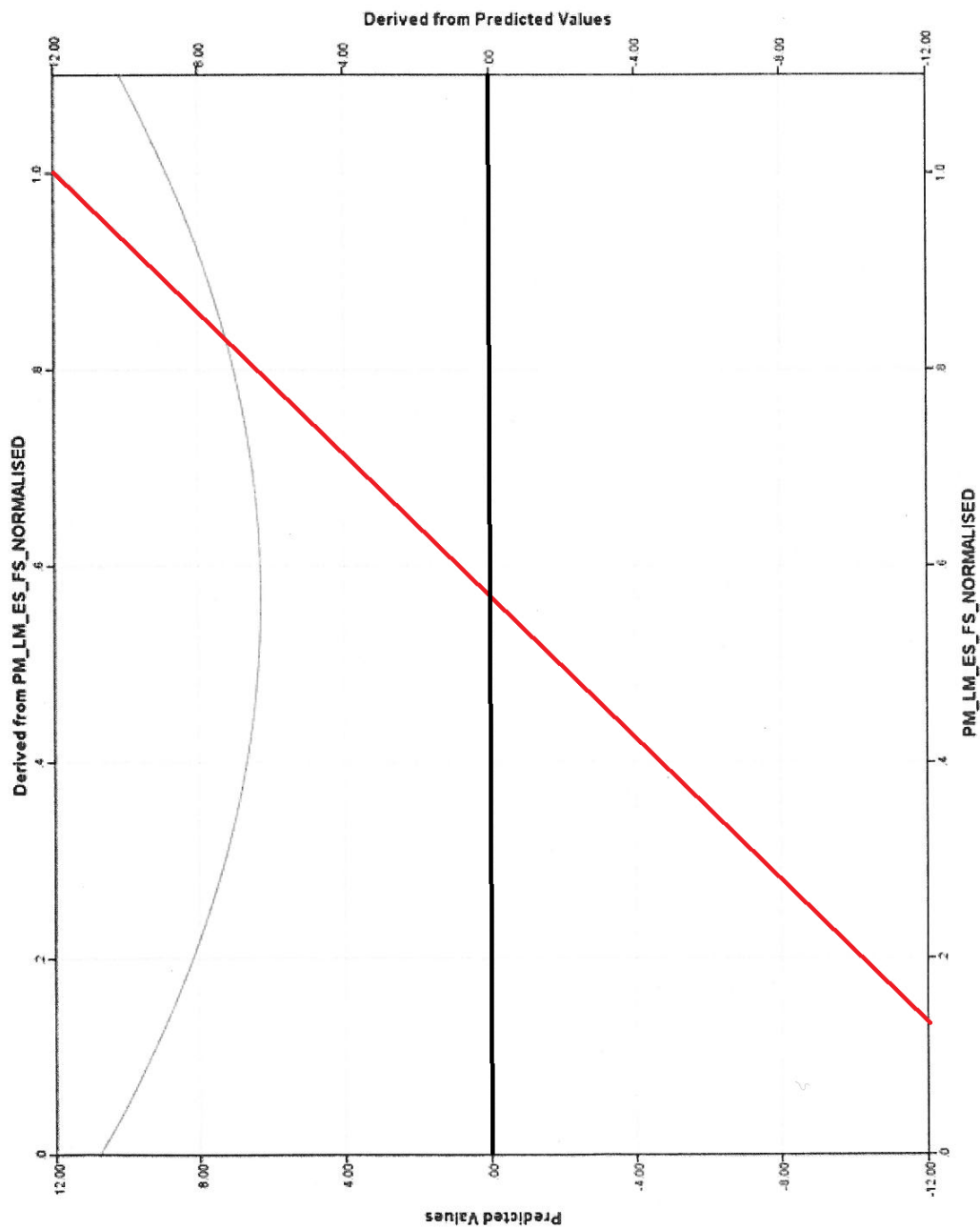
$$\frac{\partial}{\partial x}(\bar{\alpha} - 15.750x + 13.818x^2)$$

$$\frac{\partial y}{\partial x} = f'(x) = 27.636x - 15.750 \quad (7.1)$$

Where y is total entrepreneurial activity and the institutional complementarity term is represented by x . These results show that the higher the rates of institutional strength and coherence, the greater the impact on aggregate rates of entrepreneurship given the increasing marginal rate. Indeed the impact is most elastic the higher the rates of institutional coherence (hence why the second derivative is positive and of sizeable magnitude). There is diminishing returns involved where reductions in the overall institutional coherence ($1 > n < 0$). Therefore, as argued, entrepreneurial policy should be orientated in such a way as to maximise the overall coherence and complementarities of the political economy. Figure 7.2 plots the marginal derivative (red line) alongside the quadratic estimation of Model 4b (black line).

These results also show that the marginal rate of change is higher for liberal reform than non-liberal reform, reflecting the potential relative difficulty within institutionalising strategic modes of coordination. Liberal reform provides higher levels of marginal return and suggests that institutionalised liberal reform estimates higher returns to aggregate entrepreneurship. It also suggests a 'J' curve effect of transitioning institutional sets

Fig. 7.2 Quadratic Estimation Marginal Partial Derivative: *Marginal Productivity of Institutional Coherence*



Simulation based on Model 4b where control variables are held at their means. Red line plots the first order partial derivative of Model 4b

from non-liberal to liberal; weakening the institutional set in liberal countries provides an estimated sizeable shift in aggregate rates, and perhaps explains the dominant social blocs demand to sustain and maintain the institutional set in a particular direction (Jackson & Deeg, 2008; Amable, 2016; Hall & Thelen, 2009). Estimated countries near the global minima (stationary point), when reforms are enacted, will have a slower impact on aggregate entrepreneurship, suggesting a policy lag and the political economy of structural reform. In other words, benefits would appear at best in the long-run but short-term effects would be negative or yielding little marginal returns. This aspect would involve political economy problems for reforms. The positive second derivative also shows that there is an increase in aggregate entrepreneurial activity at an additional rate above movements away from global minima. Overall, qualitative annotation of these empirical illustrations suggests that there are both increasing marginal returns to strengthening the coherence of the complementarity set, both in the direction of liberalisation and institutionalising non-liberal structural reform.

Functional Equivalence, Bifurcated Convergence & Equifinality: *Stability of Institutional Equilibria*

Dynamic stability, institutional evolution and bifurcated convergence of 'modes of capitalism' stems from the economic competitiveness of their institutional configurations, which can be achieved via the combinations of institutions which in turn yield functional equivalent outcomes.

The quadratic nature of the findings has important wider public policy illustrations with respect to both the functional equivalence and estimated dynamic stability of institutional equilibria. Importantly, estimations of the marginal derivative infers

implications for the rate of change of aggregate activity against the function of the rate of change of institutional coherence, for which this studies results support. As such we illustrate the panel analysis in dynamic form (with respect to Y_{it} of i across t). Again:

$$TEA_{it} = f(IH_i) \quad (7.2)$$

where...

$$\frac{dTEA_i}{dIH_i} = f'(IH_i) = 15.751 + 27.636x$$

therefore infers dynamically...

$$T\dot{E}A = \left[\frac{dTEA}{dt} \right] = f'(IH_i) > 1 \quad (7.3)$$

$$f'(IH_i) = I\dot{H}_i = \left[\frac{dIH}{dt} \right] > 1 \quad (7.4)$$

as such, we have, given estimations of Equation 7.1..

$$\left[\frac{d^2TEA}{dIH^2} \right] = f''(x) > 0 \quad (7.5)$$

Thus dynamically we can deduce that growth infers..

$$\frac{T\dot{E}A}{TEA} = \left[\frac{\partial \ln TEA}{\partial t} \right] = \frac{I\dot{H}}{IH} = \left[\frac{\partial \ln IH}{\partial t} \right] \quad (7.6)$$

$$\frac{\partial}{\partial t} [\ln TEA + \ln IH] \quad (7.7)$$

$$\frac{\partial \ln TEA}{\partial t} + \frac{\partial \ln IH}{\partial t} = n \quad (7.8)$$

given that

$$\frac{\partial \ln TEA}{\partial TEA} \cdot \frac{\partial TEA}{\partial t} + \frac{\partial \ln IH}{\partial IH} \cdot \frac{\partial IH}{\partial t} = n \quad (7.9)$$

where n gives us, where positively elastic ($n > 1$), the growth rate of returns to coherent reform in continuous time. The particular solution of the differential equations gives, through the ‘time elimination’ method:

$$TEA = nIH \quad (7.10)$$

$$\frac{TEA_t}{IH_t} = n \quad (7.11)$$

and so the general solution of the differential equation yields..

$$TEA_t = \int t dt = \frac{t^2}{2} + cn \quad (7.12)$$

$$T\dot{E}A_t = \int t dt = c + \frac{t^2}{2} \cdot \left[\frac{1}{\partial t} \right] n \quad (7.13)$$

where..

$$\frac{dIH}{dt} = t \quad (7.14)$$

and the function of the rate of change of TEA is the general solution of the differential equation and c is the arbitrary constant. Again, n gives us the dynamic effects of institutional coherent reform across t . Given n may yield a first order derivative of:

$$\frac{dn}{dt} = f'(x) = m \quad (7.15)$$

where $m < 1$ suggests potential for convergence towards stable equilibria of coherent institutional logics. This has implications for dynamic reform (as highlighted beforehand) and stability of equilibria where $T\dot{E}A$ is greatest where $I\dot{H}$ yields $n > 1$ and $m < 1$, all else equal. Given Institutional Coherence ($I\dot{H}$) is built upon institutional complementarities which are stylised by internal stability, infers dynamic stability of both institutional configurations (bifurcated convergence) and economic output (equifinality and functional equivalence) assuming ceteris paribus (that is where control variables are held at their means). Likewise, optimisation of n and subsequently m would be maximised the greater the sub-sphere reform yields:

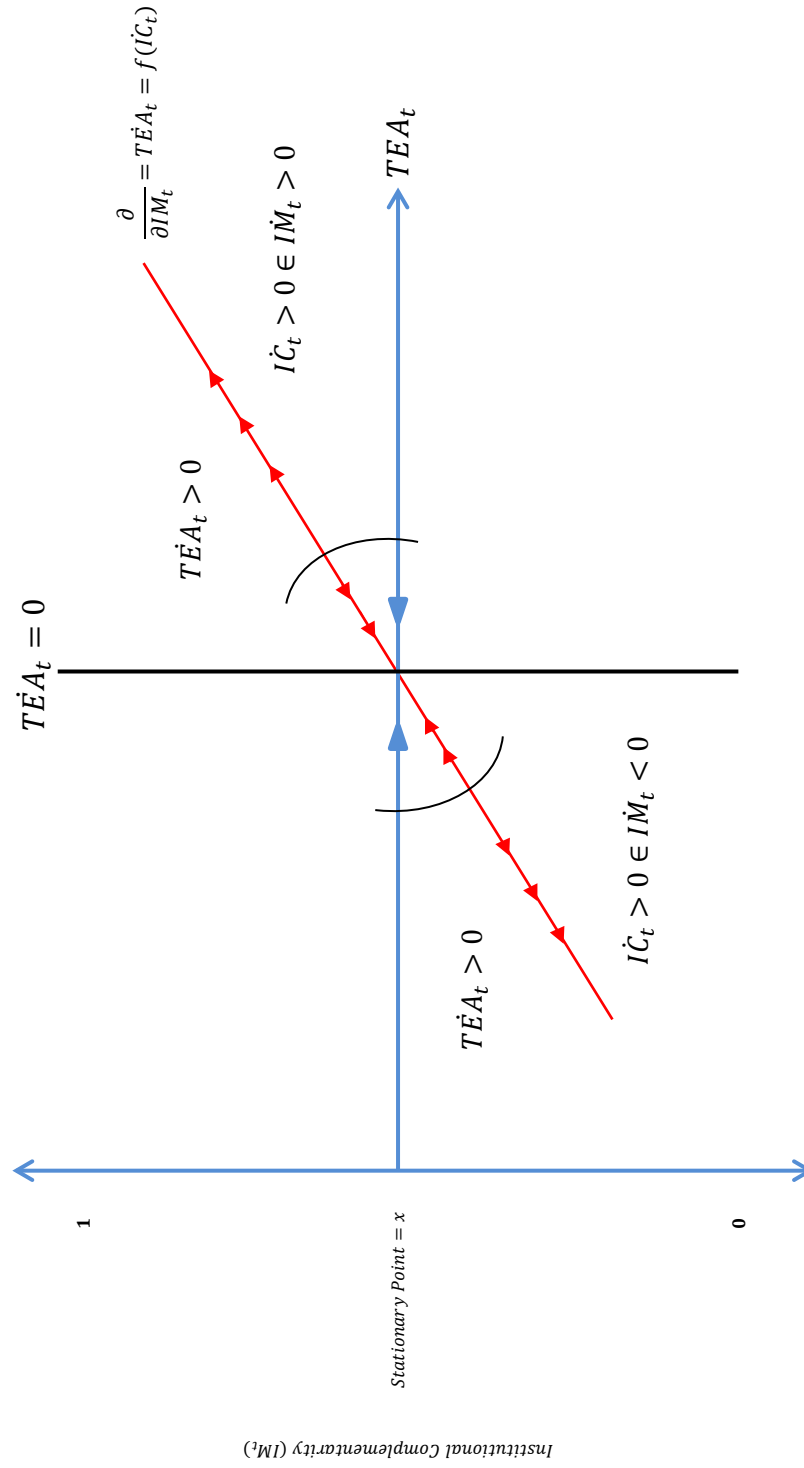
$$\left[\frac{\partial^2 u(A, B)}{\partial A \partial B} \right] \leq 0 \quad (7.16)$$

That is, the marginal ‘efficiency’ of a certain institutions is positively related to the presence or intensity of another institution in another area. As such, two points are worthy of elaboration.

Firstly, as illustrated beforehand, these results are consistent with equifinality and functional equivalence, whereby different systems produce similar economic outcomes (Judge et al, 2014). The concept of equifinality refers to a situation where “a system can reach the same final state, from different initial attributes and by a variety of different paths” (Katz & Kahn 1978, p. 30). An earlier example of this type of debate arose in the 1920s over whether socialist states could design an economic system that would match the capitalist system. At its heart was the question of whether two fundamentally different economic systems could perform equally well; that is, whether there could be equifinality of economic outcomes in respect to institutional context. The tenor of the studies results supports the idea of equifinality. These finding, which is similar in spirit to Boyer’s (2004) result, is important for comparative institutional analysis because it demonstrates equifinality in specialisation and output outcomes. In other words, the outcome suggests that different institutional complementarities and configurations may produce similar comparative institutional advantages. This contrasts the recent hypotheses put forward by Witt & Jackson (2016) who develop an alternative view that is based on conflictual logics of action, rather than coherence. Certain combinations of liberal and coordinated logics across two or more institutional sub-spheres may enable institutional advantage (equifinality) by compensating for institutional weaknesses ‘inherent’ in "pure" configurations.

Secondly, where the rate of growth of TEA is an increasing function of $I\dot{H}$ where $n > 1$, brings important implications for the dynamic stability of institutional configurations through returns to economic outputs. Stability stems from the economic competitiveness of institutional configurations (Streeck & Thelen, 2009; Hall & Thelen, 2009), which can be achieved via the combination of institutions built on either coordinated or market coordinated economic logics. Given the concept of institutional complementarity can be used to illustrate why institutions are resistant to change and why introducing new institutions into a system often leads to unintended, sometimes suboptimal, consequences yields the discussion of the stability of institutional equilibria. Differently, institutional entrepreneurs do not have interest in institutional change but would press for an intensification of the specific nature of variety which yields economic returns (Amable, 2016). As such, economic competitiveness built upon coherent sets of institutional complementarities renders change limited to one that would increase the whole fit of institutions. This bifurcated convergence further increases differences between political economies, and potentially the types of activities pertaining to each economic logic. Therefore, coherent political economies can be argued to posit a stabilising equilibria, whereas incoherent political economies render an unstable equilibria delimiting the potential for improved economic outcomes/general efficiencies. This sheds light on the depiction of path-dependant institutional change which emphasises continuity and the persistence of variety in capitalist structures (Jackson & Deeg, 2008; Hall & Thelen, 2009).

Fig. 7.3 Institutional Coherence and Equilibrium Dynamics



The dynamic model inference and deduction of system inefficiencies is stylised by Figure 7.3, whereby coherent coordination yields an improving equilibria and TEA levels. Phase diagrams are a tool that one can use to determine and illustrate the type of equilibration process, solution and general pattern of variables over space and time. Given the rate of change of *TEA* and *IC* is above positive parity (given the positive marginal derivative is greater than 1), infers that equilibria defined by coherent institutions will help sustain future stable equilibria, given stability stems from the economic competitiveness of institutional configurations (law of unintended consequences) (Aoki, 1994; Hall & Thelen, 2009). As such, deduction can hypothesise the following endogeneity:

$$\Delta IH_{it} = f(TEA_{it}, TEA_{it-1}, IH_{it-1})$$

Reform aimed at moving the political economies complementarity set from the area of Figure 7.3 where the rate of change of TEA tends towards zero when the institutional complementarity marginal change tends to its stationary point (the dynamic area between the two black curves), is a means to create a stable equilibria in coherent typologies. The placement of the hypothesised black curves is plotted with the estimate of where coherence meets incoherence, where the rates of change are considerably tending towards zero. As such, the links between the above functional endogeneity is either equal to zero or negative.

These illustrations may have important implications. In terms of public policy of reform, the economic performance of comparative institutional configurations may be most adequately explored in the conceptual terms of evolutionary considerations (Hodgson, 1996). That is, taking account formally of the dynamics and thus endogeneity of institutional change stemming from functional equivalence yield important implications

for institutional bifurcated convergence. Increasing returns and positive feedback are helpful in understanding institutional resiliency and institutional change (Thelen, 2004). Whilst empirical estimation of the theoretical model is outside the remit of this thesis, reinterpretations of the panel analysis estimations and super-modularity of institutional complementarities mathematically infers a general patterns of institutional change in the face of TEA being a positive function of the institutional coherence of the political economy. This extends the original findings, which allows a finer grained, functional and dynamic lens of institutional change and structural reform.

Furthermore, such contributions can infer the wider role that states can take in their approach to institutional reform. Identifying the equifinality of different coordination mechanisms is important for the question of 'what kinds of reforms' (and especially in which areas) may undermine the capacities for coherent coordination (as elaborated beforehand). Especially, couple with discussion of the (in)stabilities of (in)coherent varieties of coordination, illuminates a greater discussion of how stabilities can be increased in incoherent models. Differently, any analysis of how institutions change should begin from a conception of how institutions are sustained during periods when they may remain stable (Hall & Thelen, 2009). The lack of self-reinforcement in light of incomplete calibration and complementarities means that states are actively pervasive in the direct production, regulation and correction of coordination failures (Molina & Rhodes, 2007). Institutional stability in these systems can quickly degenerate into sclerosis producing durable 'non-complementarities' within the production regime and across the political system. State regulation will tend to reinforce long term inefficiencies because the collective action (i.e. prisoner dilemma) problems that ensue and subsequent institutional inertia. In the absence of mechanisms for collective goods provision, or a state independent and powerful enough to resist vested interest demands, actors will tend rationally to pursue their independently defined interests.

Complementarities - the outcome of coordination between freely contrasting actors - will prove extremely difficult to build. Illuminating the fact that states are self-perpetuating the long-term inefficient equilibriums raises a debate of how institutional incoherence can be overcome. Thus institutional change needed requires significant renegotiation of the politically invested system of public-political control (Streeck & Thelen, 2009; Schneider, 2009; Wood & Frynas, 2005) invoked by limited degrees of freedom and path-dependencies. This is to overcome the issue of institutional settings becoming permanently settled into their foundations with the preservation of institutional contradictions and non-complementarity. In short, once you illuminate the role of complementarities, it is difficult to separate away a narrative on institutional change and stability.

7.5 Conceptual Framework

The foregoing discussion has argued that national institutional environments exert an important influence on the cross national aggregate rates of entrepreneurship. The research findings show that, on the one hand, national political economies are marked by considerable diversity. The diversity is defined by the composition and calibration of institutional complementarities. On the other hand, the findings further show that institutions matter because the coherence of the mode of coordination creates various incentive structures, opportunities and entrepreneurial capital that facilitate the overall efficiency of the political economy, as showed in the aggregate rates of entrepreneurship. Hence, this study argues that the rates of entrepreneurship is not only determined by 'institutions' as is commonly suggest in existing comparative international entrepreneurship literature, but the degree to which various institutions interact to underpin the

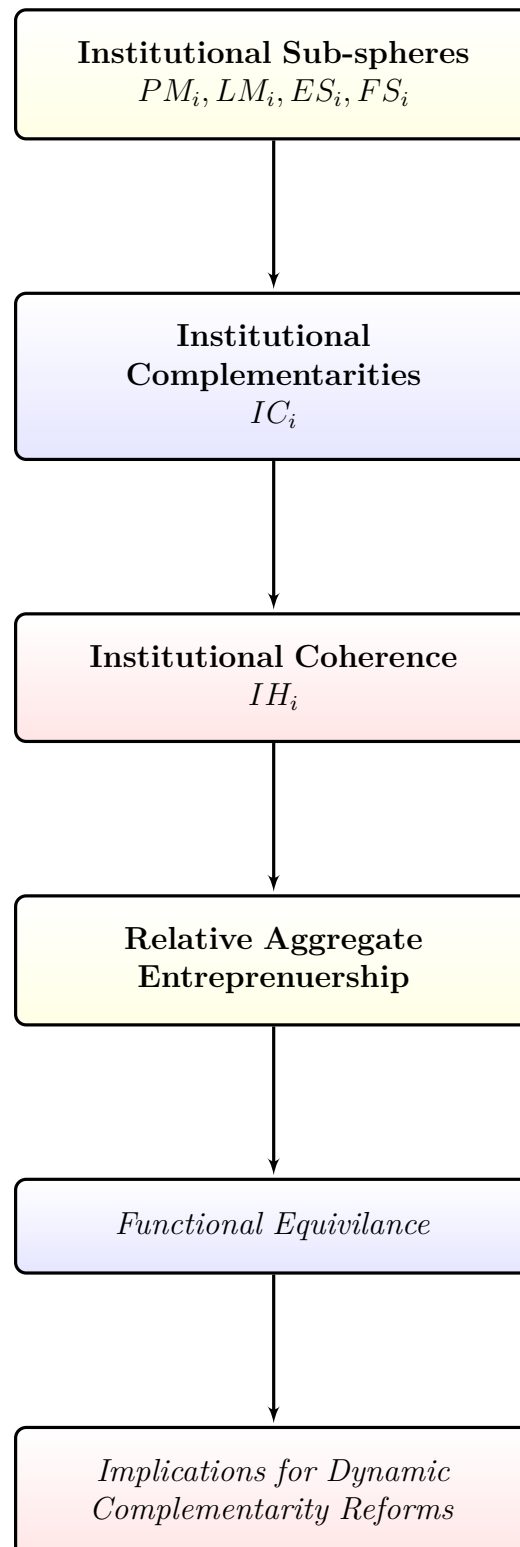
overall coherence of the political economy is a driving force of aggregate economic performance. In doing so, it helps extend the analytical and empirical framework that typically underpins comparative international entrepreneurship research.

Based on a variety of arguments advanced in this thesis, it is possible to propose an enhanced conceptual framework for both conceptualising these findings and for guiding future research on comparative international entrepreneurship and comparative institutionalism. This is further illustrated by a schematic presentation of Figure 7.4.

The key message of the framework is that while singular institutions are important, the degree to which they interconnect and underscore a coherent logic, defines the way in which institutions matter. This reorientates the common logic that public policy for entrepreneurship should be targeted at particular singular frictions, to consolidating the overall coherence of the political economy. This parsimonious theoretical framework can enable future research to move away from an eclectic towards a more focused investigation of how specific core institutions influence entrepreneurship, answering the calls of Dilli, Elert & Herrmann (2018). From a public policy perspective, such insights are highly useful for all those policy-makers who aim to foster entrepreneurship, against the backdrop of functional equivalence and institutional complementarities.

In terms of guiding principalities of the proposed conceptual framework for further comparative international entrepreneurship research, the key implication is that institutions should not be studied in isolation. Rather, research into the impact of institutions should stem from the notion of functional institutional interactions which define to a greater extent the nature of institutional endogeneity. This has clear implications for how institutions ‘matter’.

Fig. 7.4 Conceptual Framework



7.6 Chapter Summary

This chapter first opened with a discussion differentiated by the three main research aims. Specifically, it is seen that there remains rich institutional diversity between political economies, identified by nine clusters of countries across four modes of capitalist, each defined by complementary variants across institutional sub-spheres. It is also discussed that institutions effect aggregate levels of entrepreneurship. That is, when complementary institutions are present across the sub-spheres of the political economy, rates of Total Entrepreneurial Activity are higher. Institutional diversity identified by this specification appear to offer unique explanations of cross-national levels of entrepreneurship. Overall, institutional diversity is a key driver of varied aggregate entrepreneurial rates. Specifically, the level of entrepreneurial rates is driven by the degree of institutional coherence of the political economy. This implies that aggregate economic performance is estimated be higher in nations whose institutionalised practices correspond more closely to the coherent types of market-based and strategic coordination models of capitalism. These findings draw attention to arguments concerning the degree to which countries institutional frameworks need to closely complementary and institutionally coherent to allow for greater firm and entrepreneurial activity. In particular, these results show the higher aggregate entrepreneurial performance of a country is positively linked to the overall coherence of the institutional environment.

This chapter then went on to discuss contributions to theory in specific disciplines followed by contributions to public policy. It was seen that contradictions in the institutional complementarities can pose considerable frictions and inefficiencies for economic actors by undermining the coherence of the political economy. Furthermore, political economies with particular types of institutions in one sub-sphere tend to have

particular types of institutions in other sub-spheres. Therefore reforming a particular institution in a uni-direction should account for the interactions and functionalities between other institutional sub-spheres commensurate to the mode of capitalism. As such, it was seen that dynamic stability, institutional evolution and bifurcated convergence of 'modes of capitalism' stems from the economic competitiveness of their institutional configurations, which can be achieved via the combinations of institutions which in turn yield functional equivalent outcomes.

Chapter 8

Conclusion

8.1 Introduction

This chapter summarises the key contributions from this thesis. It begins by providing an overview of the thesis and restating the main research gaps, whilst demonstrating that the research aim and objectives developed to address these gaps have been answered. Further, it outlines a number of specific contributions, both empirically, theoretically and methodologically. This is continued by outlining implications and recommendations for policy, followed by a discussion of the main limitations of the study. The chapter concludes by suggesting potential avenues for future research.

8.2 Thesis Summary

This thesis examined the impact of institutions on international entrepreneurship. Taking an ‘institutional configuration’ approach, this thesis poses several questions in reference to the nature of institutional diversity and how this can explain the divergent levels of entrepreneurial activity. The aim of this study was to explore the influence of national institutional environments on the levels of entrepreneurship

Several literature streams have informed this study. In conceptualising and operationalising the notion of institutions, it drew upon the Governance works of Amable (2003) in the area of Comparative Institutionalism. In understanding the structure and composition of global entrepreneurial activity, the study drew primarily upon the burgeoning conception from the comparative international entrepreneurship literature. Other relevant literatures that informed the research include national institutional system thinking, institutional coherence and comparative innovation performance. The main justification for conducting this research stemmed from several important gaps identified in the comparative international entrepreneurship literature. These concerned: (a) the relative neglect of a ‘comparative institutionalism approach’ and, more specifically, the lack of theoretical emphasis of national institutional system thinking via Governance approaches; and (b) overlooking the conception of key comparative institutionalism themes such as (i) institutional diversity, (ii) institutional complementarities and its configurational approach, and (iii) institutional coherence. At its heart, this thesis illustrates that there is a need to move away from *convergent* views of institutions, to applications which sees institutions as *divergent* creations.

By following a framework derived from Amable’s (2003) comparative institutionalism perspective and applying it to the gaps identified in the comparative international

entrepreneurship literature, the study divided national institutional sub-spheres, and through factor analysis, investigated the separate sub-spheres within a configuration, accounting for institutional complementarities. This approach offered a framework which enabled the research to move away from an eclectic list of institutional factors to offer a parsimonious appreciation of sets of institutions. Subsequently, this provided a basis for the main research aim to be elaborated and divided into three specific research objectives. The empirical findings in relation to each research objective were presented and analysed in Chapters 5 and 6. The discussion of how these findings relate to and affect existing knowledge within various camps of literature was provided in Chapter 7.

The first objective - which was to ascertain whether capitalist institutional diversity exists, and if so, whether these diversities could be characterised between political economies - was addressed using empirical evidence generated from a principal components analysis of 42 manifest variables. This evidence concentrated on generating latent factors in the institutional dimensions of *product* markets, *labour* markets, *education* system and *financial* system. Through the PCA, multiple latent factors were developed, and through a cluster analysis technique, the study was able to identify a topography institutional capitalist diversity. Indeed, there exists rich institutional diversity between political economies, identified by nine clusters of countries across four modes of capitalism, defined by complementary variants across institutional sub-spheres. Beyond the original empirical characterisation of economic models, these results illustrate that the dichotomy between market-based and coordination-based capitalism is still an important hallmark of institutional diversity. The findings show some but not complete support for the VoC approach. Also consistent with the VoC approach, these results show, that this studies institutional configurations pertinent to those akin to Hall & Soskice's (2001) LME and CME classifications afford substantial

comparative advantage, compared with the relative comparative disadvantage of those configurations not marked by the market/non-market dichotomy.

Furthermore, persistent cross-national differences in institutional practices in the face of intense convergence pressures suggests that, despite some liberalisation in coordinated market economies, the distinctions central to comparative capitalism studies are likely to be of continued value and thus worthy of continued discussion on institutional change and reform. One therefore obtain support for stability or the non-convergence hypothesis of VoC.

The second objective - which was to ascertain the effects of institutional diversity on aggregate entrepreneurship - was addressed through multivariate panel analysis. Using the institutional factors developed under objective one, the study tests several model specifications between institutions and levels of international entrepreneurship. Departing from the *narrow* definition of institutions, the cluster and factor analysis underlines the diversity of political economies which are built upon unique configurations and typologies of institutions. These factors are used to create coordination indices for each institutional sub-sphere, which illuminates the degree of non-market coordination present within institutional sub-spheres.

Using panel data analysis, the study finds that the relationship between the degree of coordination within the institutional complementarity format and the level of entrepreneurial activity is non-linear. Specifically, the relationship is quadratic and ‘U’ shaped. Where the institutional structure of the political economy allows for higher levels of market coordination (akin to this studies market based cluster) or higher levels of strategic coordination (akin to this studies coordination based cluster), estimated entrepreneurship rates are higher than they are when there is more variation in the

types of institutional complementarity present in the political economy. The aggregate performance of entrepreneurship is moderated by the institutional configuration of the political economy.

These results suggest that the institutional diversity and complementarities perspective of the comparative institutionalism literature, built on the distinction between coherent and incoherent sets of political economies (Hall & Gingerich, 2009; Amable, 2009) has genuine merit. The institutional coherence of the political economy is a driving explanatory variable in increasing aggregate rates of entrepreneurial activity. That is, the general performance of aggregate entrepreneurship is suggested to depend on the degree of institutional coherence. When complementary institutions are present across spheres of the political economy, aggregate rates of entrepreneurship are higher; both liberal and strategically coordinated political economies appear to offer general efficiencies to economic actors, a theme parallel to the arguments of the founding fathers of comparative institutionalism, Hall & Soskice (2001).

The third objective was to ascertain whether perspectives from comparative institutionalism can explain the divergent nature of entrepreneurial activity across nations. This objective allowed for the mapping of institutional diversity as well as an examination of the causal combinations of institutions that account for higher levels of entrepreneurial activity across nations. The focus of such approach is on the institutional complementarities within countries that co-evolve with those of other countries to produce distinct governance configurations. Thus, no single institutional characteristic is sufficient to explain outcomes; instead, the outcome is related to combinations of conditions (Fiss, 2007). This research has been able both to identify fine-grained configurations and to evaluate their impact on national economic outcomes.

In summary, this study proposes and finds evidence for the argument that national institutional systems, and thus institutional configurations provide an additional and significant explanation of aggregate international entrepreneurial activity. The study observes equifinality and functional equivalence in that some configurations are more supportive of performance than others. Moreover, the degree to which configurations impact aggregate activity is a function of the institutional coherence of the political economy. The study finds institutional configurations to be important through the mechanism of institutional complementarities and thus increasing institutional coherence. How one defines institutions therefore has important implications for how institutions matter for entrepreneurship.

8.3 Thesis Contributions

Using Baumol's (1990) work on productive, unproductive and destructive economic activities as a starting point, the entrepreneurship literature investigating the antecedent influence of institutions on entrepreneurship gained particular momentum in the early 1990's. It has often been concluded that 'institutions matter' for entrepreneurship because they structure the relative economic pay-offs which influence entrepreneurial activities (Baumol, 1990). While the literature agrees uniformly that both formal and informal institutions incentivise individual behaviour (North, 1990), hereby influencing the extent and composition of an economies activity, it also focussed on individual and isolated institutional drivers of entrepreneurship. Formal institutions, such as private property rights, tax policies, Government regulation, capital market regulation have been empirically found to be beneficial for entrepreneurial activity. Likewise, informal institutions supporting entrepreneurship include but not exclusive to power

distance, transactional trust and culture. In short, the current literature suggests that differences in entrepreneurship between countries can be explained by a broad eclectic list of institutions as defined by their theoretical basis.

This literature on institutions and entrepreneurship however suffers from several problems. First, a clear concept of institutions and the institutional system is missing. Secondly, a parsimonious understanding of whether and how core institutions combine to facilitate entrepreneurship is missing. Third, scholars often ignore institutional theory which defines political economies as divergent creations in favour for perspectives which emphasise their convergence. This leads to the issue that there is a prevailing hegemony which stresses linearity and thus 'one-size-fits-all' configuration of an institution or institutions. Finally, these misconceptions of institutional influence lead to a narrow view of how public policy can be conducive for entrepreneurship.

Identification of these literature voids has led this study to contribute by taking a varied approach to institutional theory, with perspectives from comparative institutionalism. Applications from the comparative institutionalism literature made it possible to address these problems. Firstly, comparative institutionalism clearly defined the institutional architecture, a configuration of institutions. Institutions thus are the written or verbally agreed rules of the game which lead to a systematic behaviour of actors (individuals and organisations) i.e. of entrepreneurs and their ventures. This configurational approach to national institutions is a way of distilling a complex array of interdependent variables into a unified whole.

Second, this study's approach stemming from comparative institutionalism offered a parsimonious theoretical framework to identify a core of inter-related institutions which influence economic activity (Amable, 2003; Hall & Soskice, 2001; Herrmann,

2019). To this end, it focussed both on the composition of the institutions and the functional interdependence of institutions to which defines the overarching taxonomy of the political economy. Institutions were not be seen in isolation but rather as non-random creation as defined by the nature of neighbouring institutions. Institutions channelling the interaction between firms and their activities are therefore contingent on also the interactions between the structures themselves. This has clear implications for how ‘institutions matter’, as the findings have illustrated.

This research contributes by showing that the concept of institutional complementarity is helpful for understanding the internal logic of institutional configurations. It challenged the focus on effects of single institutions, and redirects our attention to the functional effects of configurations. It is from this conjecture that aggregate hypothesis into the effect of institutions on economic performance can be empirically validated. As argued by Hopner (2005b), complementarity can be a highly abstract concept, describing one possible functional feature of institutional interaction. Its sources and consequences, though, have to be specified by empirical research on actual institutions in a given space and time. As such, this research contributes by supporting in the wave of empirical validations into the role of institutions, their complementarities and their pertaining functional interactions.

This thesis yields important empirical contributions. Said research focuses on the analysis of 29 countries, all members of the OECD, at approximate levels of development. Based on factor, cluster and panel analyses of institutional indicators, this research contributes by showing (1) How a core set of institutions differ systematically and in a parsimonious way between countries; (2) How these institutional constellations facilitate the development of aggregate levels of entrepreneurship; and (3) The format

from which institutions effect entrepreneurship: through the mechanism from which the institutional matrix is coherent.

These findings illustrate how a distinct and highly parsimonious set of institutions governing the exchange between entrepreneurs and their labour markets, product markets, education system and financial system lead to different ‘economic models’. This has shown to translate into different production outcomes across economies defined by their institutional diversity. The weight of the evidence suggests that the varieties in economic models captures important difference among political economies. The concepts of market-orientated and strategic coordination do seem to reflect an underlying dimension practices across countries. The contention that institutional complementarities operate across political economies is borne out by the evidence. Persistent cross-national differences in institutional practices in face of convergence liberal pressures, suggests that, the distinctions build upon coordination are likely to be of continuing value.

The institutional configuration perspective recognises that human behaviour is jointly shaped by the interdependence between institutions, a proposition often discussed but rarely (given the difficulty) empirically tested. Collectively these findings support the notion that one important route to advancing institutional theory and comparative entrepreneurship research is to integrate the largely separate research streams on institutional complementarities, coherence and economic activity by considering configurations of both types and function of institutions.

It is of relative importance to note that the research findings from this study go beyond a simple assertion that ‘institutions matter’ for entrepreneurship. The rich empirical evidence presented in Chapters 5 & 6 and subsequent discussions has

also provided some insights on the questions of how and why institutions matter (i.e. through the mechanisms of institutional coherence), and also which configurations of institutions are more or less important. The empirical chapters contain a number of supporting econometric estimations, coupled with further illustrations with Chapter 7 which shed important lights on the mechanisms through which single institutional sub-spheres combine to influence aggregate performance. This represents a much more sophisticated set of findings, and subsequently, a more significant contribution to comparative international entrepreneurship literature and wider political economy scholarship.

In studying the effect of institutions on cross national rates of entrepreneurship, they are often investigated in cross-sectional analysis, typically by isolating a single institutional factor. As highlighted beforehand, in the econometric analyses, the endogenous nature of institutions has been recognised as a key limitation to the validity of estimates. Isolation to singular institutional effect is largely ignorant of the institutional complementarities which stylise the architecture of the institutional environment and their subsequent impacts (Aoki, 2001).

This research yields important public policy contributions. Firstly, it can be illustrated that economic reform in one institution will have impact on other interrelated institutions, thus reform such take a holistic political economy approach, and not just removing ‘frictions’ in an identified institution/area. In this way, ‘monocropping’ and supplanting institutions which may be empirically validated to produce returns, may fail to produce returns in the absence of considering the functional interactions with other institutions. Reforms in a few institutional sub-spheres cannot lead to a functionally coherent system because of the interdependence between institutions and its consequences for agents strategies.

Secondly, the implementation of some market-based structural reforms, even in conjunction with one another, may not be enough to transform political economies based on different principles into liberal market economies. Given the rich diversity between OECD economies, and the empirical suggestion of functional equivalents, forwards the rationale that reform can be against the grain of liberalisation towards market based political economies. Economic returns are increased by institutional coherence, for which means solidifying the complementarity set between institutions, for which can be in the direction of strategic (non-market) coordination. The impression is that such a large set of inconsistencies is suggested to affect performance.

Thirdly, the results contribute in its inference for the wider role that states can take in their approach to institutional reform. The equifinality of different coordination mechanisms is contributes to the question of ‘what kinds of reforms’ (and especially in which areas) may undermine the capacities for coherent coordination. Especially, couple with discussion of the (in)stabilities of (in)coherent varieties of coordination, contributes to a wider discussion of how stabilities can be increased in incoherent models. Differently, any analysis of how institutions change should begin from a conception of how institutions are sustained during periods when they may remain stable (Hall & Thelen, 2009). The lack of self-reinforcement in light of incomplete calibration and complementarities means that states are actively pervasive in the direct production, regulation and correction of coordination failures (Molina & Rhodes, 2007). Institutional stability in these systems can quickly degenerate into sclerosis producing durable ‘non-complementarities’ within the production regime and across the political system. State regulation will tend to reinforce long term inefficiencies because the collective action (i.e. prisoner dilemma) problems that ensue and subsequent institutional inertia, and therefore entrepreneurial policy should be taken in such contextual discussion. In the absence of mechanisms for collective goods provision, or

a state independent and powerful enough to resist vested interest demands, actors will tend rationally to pursue their independently defined interests. Complementarities - the outcome of coordination between freely contrasting actors - will prove extremely difficult to build.

Illuminating the fact that states are self-perpetuating the long-term inefficient equilibriums raises a debate of how institutional incoherence can be overcome and how entrepreneurial policy can be successful. Thus institutional change needed requires significant renegotiation of the politically invested system of public-political control (Streeck & Thelen, 2009; Schneider, 2009; Wood & Frynas, 2005) invoked by limited degrees of freedom and path-dependencies. This is to overcome the issue of institutional settings becoming permanently settled into their foundations with the preservation of institutional contradictions and non-complementarity. In short, once you illuminate the role of complementarities, it is difficult to separate away a narrative on institutional change and stability. This study contributes to entrepreneurial policy by demonstrating and empirically validating that governments must take account of the functionalities and interdependence of institutions. Contradictions in the institutional complementarities can pose considerable frictions and inefficiencies for economic actors by undermining the coherence of the political economy. Monocropping policies which work in one model of capitalist may not work in another. Importantly, this means that policymakers need to be aware of the implications that regulatory changes in the institutional environment will have, as suggested by Dilli et al (2018).

Overall, this thesis jointly makes contributions to the extant literature. The current comparative international entrepreneurship literature suggests that differences in entrepreneurship between countries can be explained by a broad list of institutions as defined by their theoretical basis. However, to date, comparative institutionalist

perspectives have hardly been applied in entrepreneurship research. This thesis provides a theoretical and empirical contribution by introducing a holistic, configurational approach to institutions and their influence on entrepreneurship. This echoes calls by Herrmann (2019) to use certain comparative institutionalist theoretical strands to "explain how a core group of distinct national institutions facilitate the development of different types of entrepreneurship between countries".

This study is one of the first to introduce the key tenets of comparative institutionalism, contributing by theoretically blending and empirically validating the role of institutional complementarities, institutional coherence and equifinality. In particular, it contributes to extant literature by shifting the extant literature focus away from *converging* approaches to institutional to *diversity* approaches to institutions. This contributes by empirically justifying, through a robust approach to the estimation of the institutional environment, that there is not 'one-best-way' for an entrepreneurial society, but rather an emphasis to the functional equivalence of political economies based on their complementarities and coherence. No single institutional characteristic is sufficient to explain outcomes, as extant literature suggests. Instead, the outcome is related to combinations of conditions (Fiss, 2007). This research has been able both to identify fine-grained configurations and to evaluate their impact on national economic outcomes, and again adds empirical substance to the calls of Herrmann (2019) for "entrepreneurship research to investigate the idea of institution-based equifinality". This yields important public policy implications given reforms in a few institutional sub-spheres cannot lead to a functionally coherent system because of the interdependence between institutions and its consequences for agents strategies.

8.4 Limitations of the Study

Though these empirical findings and methodological design are robust to a large number of alternative specifications, they may have important limitations which must be identified in pursuit of further work. This study is one of the first comparative institutionalism studies in international entrepreneurship and as such, it is not without limitations.

A simplifying assumption of the study is that institutions are treated as exogenous and studied a causal link flowing from the respective independent institutional based variables and aggregate entrepreneurship. Whilst the panel analysis has controlled for any 'endogeneity' in the models, the link between aggregate performance and the structure of institutions may indeed be partially reciprocal. As argued by Deeg & Jackson (2007), the issue of endogeneity plagues all comparative institutionalism research. Institutional change may trigger a change in aggregate efficiencies, but as comparative performance shifts, institutional measures may change as a result (Hall & Thelen, 2009; Schneider & Paunescu, 2012; Deeg & Jackson, 2007).

Furthermore, there may be limitations in relation to construct validity. Bryman (2008, p. 151) argue that validity refers to the issue of whether an indicator (or set of indicators) that is devised to gauge a concept really measures the concept. Validity can be assessed in different ways; social scientists have focused their attention to measurement of construct validity (Carmines & Zeller, 1979). Construct validity generally refers to the process whereby a researcher deduce hypotheses from a theory that is relevant to the concept. Though there are no agreed upon measures based on a uniform agreement of institutions and their 'crucial dimensions' of analysis, there

is general consensus on the analysis of sub-spheres and their pertaining institutional characteristics.

Nonetheless, there could be issues raised concerning the construct validity of the coordination measures. Hall & Soskice (2001) discussed the notion of transferable versus relational assets across their categories of institutional sub-spheres. Likewise, Amable (2003) forwards a similar logic around the notion of institutional coordination. However, little consensus exists about which institutional indicators should be used to best capture 'coordination' in each institutional sub-sphere. Whilst this study takes considerable steps in validating the coordination and complementarity indices, better measures may, as the literature matures, be considerably agreed upon. Yet comparative institutionalism is defined by wide plurality in approaches, for which both bring varied methodologies and classifications of institutional sub-spheres.

Interpretation and functionalism could contribute to a relative limitation. Part of the issue is the restrictive conceptualisation of complementarities as residing in institutional coherence, which allows only for two fully complementary configurations (Morgan, 2005; Witt & Jackson, 2016). Whilst this is not necessary wrong, in particular given empirical support for the quadratic relationships where coordination indices or both high and low, concerns maybe raised in relation to the efficacy of the coherence hypothesis. As put by Crouch & Farrell (2004, p. 8), preoccupation with 'coherent logics of ordering' prevents an understanding of incongruencies, incoherence, and within system diversities". Despite this, authors are yet to characterise beyond the institutional coherence classifications, with notion of complementarity and coherence still seen by many scholars as the key leitmotif of comparative institutionalism (Hancke, 2007; Hopner, 2007). It is clear from this empirical work that the retention of such themes

that more functional interpretations are more of theoretical worth than open-ended, unstructured voluntarism.

Forcing countries into one or the other category runs the risk of ignoring fundamental differences between them, thereby emptying the classification of its meaning. Categories that are too broad tell us very little about what brings countries together in a specific group. This research only provides a snapshot of institutions over a limited time period and therefore hardly illustrates all possible changes occurring in institutional configurations. Whilst institutions are argued to have been largely stable over time (Acemoglu & Robinson, 2015), as subtly validated by the studies correlation analysis with Hall & Gingerich (2009) measures, a historical study of the evolution of institutional diversity, and its impacts on entrepreneurship would constitute a first important avenue for future research.

Furthermore, variation exists within countries at the level of states, regions and individuals. To better understand the complex relationships between institutions and economic behaviour, a multilevel analysis would indeed be desirable, examining how institutions influence individual entrepreneurial behaviour at both the aggregate country level, and the level of states or regions. Additionally, there is reason to be sceptical about the veracity of empirical findings that appear to support linkages between aggregated concepts such as these and aggregated outcomes such as growth, employment and inflation. Assessing such claims requires clear specification and testing of the purported causal mechanisms (Hedstrom & Swedberg, 1996; Goldthorpe, 2001). Finding associations may or may not tell us something interesting. It is not suggesting that aggregate analyses are useless, but rather that they should be considered only a partial step in the investigation of causal linkages and the broader research agenda. However, the frame of reference for which matches institutions with macroeconomic

performance is neatly articulated by Amable (2003), who argues that "institutions define incentives and constraints that will lead agents to invest in certain assets, cooperate, or be opportunistic. These individual decisions will affect macroeconomic performance". Institutions therefore are a key frame of reference for synthesising with macroeconomic performance, albeit the mechanisms of causality should be of a deeper, micro orientated appraisal. An analytical framework which is orientated around aggregation therefore is supported and valid, but part of a larger debate of *how* institutions matter. Nonetheless, matching institutions with aggregate measures of economic outcomes is a well-defined, respected yet emergent field of literature (i.e. Judge et al, 2014; Hall & Gingerich, 2009; Schnieder & Pausnesu, 2012; Jackson & Deeg, 2008; Witt & Jackson, 2016).

This research has largely been concerned with the interaction between micro (firms) and macro (production regime) levels in political economies. However, the macro 'production regime' is interlinked with other macro features of the macro-economy, such as the political systems (Lijphart, 1984), Aggregate Demand management regimes (Soskice, 2007) and welfare systems (Esping-Anderson, 1990). That is, the production regime is endogenous with the forces from varied arenas of the political economy. Whilst these interactions and their theoretical and empirical mapping are beyond the scope of this study (and one that is rather underdeveloped), it should be acknowledged, particular in relation to institutional change, that various arenas of the political economy can have implications for examining 'the' role of the production regime.

8.5 Directions for Further Research

This study has dealt with different literature and in this process identified a range of interesting and potentially important avenues for future research. The nature of this thesis and the subsequent conceptual framework (Figure 7.8) provides a good point of reference to understand and develop further research. The conceptual framework highlights a link with institutions, complementarities and institutional coherence for ‘aggregate outcomes’. This study provides an initial aggregate view of causality from which further studies can extend upon. This has implications for comparative international entrepreneurship by emphasising a move away from testing singular institutions to complementarities and coherence; alongside political economy, that is, better ‘linking’ and testing of institutions and their effect. The following discussion emphasises specific areas for further research in subsequent camps of literature.

In terms of guiding principalities of the proposed conceptual framework for further comparative international entrepreneurship research, the key implication is that institutions should not be studied in isolation. Rather, research into the impact of institutions should stem from the notion of functional institutional interactions which define to a greater extent the nature of institutional endogeneity. This has clear implications for how institutions ‘matter’. In view of the empirical evidence supporting the argument that distinct institutional constellations facilitate and help explain diversities in entrepreneurial activity, which implications arise for a well-defined theory of institutional affects on entrepreneurship? To begin with, entrepreneurship research would benefit from assuming a more parsimonious approach towards investigating the link between institutions and entrepreneurship (Herrmann, 2019). Importantly, the parsimonious comparative institutionalism framework, based on core sets of institutional sub-spheres

and their complementarities, can enable comparative international entrepreneurship research to move away from its eclectic 'listing' towards a more focused and functional link between institutions and entrepreneurship.

More importantly, and within this parsimonious framework, this study reorientates the literature to investigate in more detail the idea of institutional equifinality discussed beforehand. One of the major insights of this studies configurational framework and empirical results is that economic actors in differently institutional environments need to behave differently in order to achieve the same outcome. In reciprocal terms, if economic actors across economies behave alike, this behaviour tends to result into differently outcomes given the nature of the institutional environment and the functions they perform. Research into such questions of institutionally induced equifinality can offer a novel approach to investigating the link between institutions and entrepreneurship, and this study is the first in the step to shift in such direction.

The findings show important emphasis of institutional complementarities in that the configuration arrangement of the institutional environment appear to help explain the diversity of entrepreneurial activity. While it appears that the coherence of institutional complementarities appear to offer genuine efficiencies for an economy, in line with the hypothesis of Hall & Gingerich (2009), it is not been the intentions of this study to analyse this mechanism at a finer-grained level. Undoubtedly there are more complementarities in the political economy than this study proposed, some emerging literature specifies some more precise complementarities that can be explored in detail, and thus can be used to understanding some of the casual mechanisms from which underpin entrepreneurial activity.

Furthermore, as outlined in the foregoing limitations, there may well be endogenous relations between performance and institutional form. Institutional change may trigger a change in aggregate efficiencies, but as comparative performance shifts, institutional measures may change as a result. Specifically, the institutional architecture could be a result of aggregate economic performance, hereby reciprocal and endogenous. Whilst it maybe unjust to fully propose that certain economic outcomes create certain institutional forms, due to the sample scale and seminal nature of formalised institutions, it is possible that institutions are a result of prior equitable economic outcomes. Similarly, extrapolating results into the future may have its limitations given the dynamic nature of the global economy. As such, future research should examine changes in these institutional configurations over longer periods of time. Longitudinal comparative research could complement this thesis and advance the understanding of how these institutional configurations are related dynamically. Differently, additional research should be conducted to analyse the fundamental causes of the movements of specific countries across different capitalism types.

Another interesting area for further research could be to assess the nature of complementarities and reform with the use of vector autoregression (VAR) modelling. From this perspective, institutional reform could be analysed across time and margins, particularly in relation to how this impacts the strength of coefficients of other complementary institutions. This can be used, where data availability prevails, in relation to types of entrepreneurship. For example, it would be interesting to account the marginal change of one institutions on another over time, and thus how this impacts the change in said outcome measure. This indeed would allow the literature to better understand how complementarities form, adapt and adjust to external changes, particularly in relation to how they can thus be used for reform, that is, ‘impulse-response’ modelling.

Understanding the dynamics across time will help facilitate discussions not just around the concept of diversity, but rather divergence.

Additionally, this research could be used for further research to benefit from an adoption of a qualitative, inductive approach to explore the influence of institutional environments. Unlike quantitative methods, qualitative can be concerned with theory building from case studies. Considering the significance attached in this study to understanding institutions that are embedded in specific national contexts, future research could benefit from a broader "contextualised explanation" of social phenomenon (Welch et al, 2011, p. 747). This approach, which is essentially a more nuanced method of theorising from case studies, can be deemed important as it enables the much needed contextualisation of the case study countries and their institutional environments, and offers an enhanced potential for developing empirically rich analyses and explanations.

An interesting direction for future research would be to explore the consequences of the diversity of institutional structures for different *types* of entrepreneurial activity. Baumol (1990) argues that institutions are likely to affect the allocation of entrepreneurial activity. The literature would benefit from more detailed research on the types of entrepreneurial activity that flourish under the different forms of institutional structures validated by this thesis. This would lend into supporting Herrmann's (2019) plea for 'varieties of entrepreneurship', and lead in to the work of Dilli et al (2018).

The results of this thesis may be limited to the specific time frame and country sample. This study is based on a 6-year window for reasons of data availability, depth and rigour as explained earlier. Whilst this studies country sample covers only OECD countries, it is possible that a larger range of countries might lead to more nuanced

and comprehensive insights. However, the nature of present data availability may be a precluding factor in such extension to a larger country sample, yet giving the increasing scope of country level information may help in the pursuit of this future avenue of research.

The study of comparing different forms of modern capitalism has a central place in comparative political economy. The discourse of comparing institutional configurations across countries has led to the emergence of a plurality of typologies that describe the essential features of different welfare production regimes. Amongst the most prominent categorizations has been the distinction between coordinated market economies and liberal market economies, as outlined in *Varieties of Capitalism*, written by Hall and Soskice (2001). The corresponding typologies have been used in a wide range of other empirical work to explain causal relations between political phenomena and economic achievements/outcome variables.

The nature of the application of institutional theory has assumed that institutions are largely homogeneous within an economy whilst relatively distinct across economies. However, some recent work has demonstrated a "multiplexity" of institutions operating within an economy (Witt & Redding, 2013). They have noted that transnational and supranational institutions can and do influence national institutions, particularly with respect to supranational influences of bodies such as the European Union (Allen & Aldred, 2011). Each model of capitalism is likely, over a relative large time period, to adapt and evolve according to the relevant features of the global or local economy shift over time. This evolution may include elements of imitation and mono-cropping that creates institutional convergence (Judge, Fainshmidt & Brown, 2014). Whilst this has been discussed in the foregoing results of this thesis, further research could aim to

understand the degree to which institutions vary within and across various forms of capitalism so that these assumptions can be validated or overlooked.

With reference to International Business (IB), in recent years, scholars have reaffirmed their commitment to the interdisciplinary nature of their research field (e.g. Chabowski et al., 2017). In particular, they have embraced institutionalism, as a theoretical perspective embedded in a variety of disciplines and forms of analysis (see Morgan et al., 2010; Scott, 2013), as a necessary complement to more traditional modes of economic analysis. Whilst institutions matter for international business, how they matter is a contested area. It could be argued that how they matter ultimately depends on how the international business (IB) scholars define institutions. Given the plurality of institutional approaches, IB has the propensity to adopt a ‘narrow’ definition of institutions (Allen & Aldred, 2012), tending to favour New Institutional Economics (NIE) approaches. The neglect for broader definitions and approaches to institutional research has led the international business literature to concentrate on the standard ‘formal & informal’ convergent framework of institutions. This has led to belief that there is ‘one best set’ of institutions; all countries should converge and ‘monocrop’ the ‘best’ institutions (Rodrik, 2008). Taking a broader conception of institutions as underpinned by political economy/comparative capitalist institutionalism literature provides the contrast to ‘convergent’ based views; institutions are divergent creations and there is ‘not-one-best-way’. Indeed, what is lacking from the international business literature is an analytical focus on the ways in which institutional diversity can impact firms naturally operating within varied political economies (Jackson & Deeg, 2008; Morgan, 2012; Allen & Aldred, 2012; Jackson & Deeg, 2019). The disciplines of political economy and comparative capitalist institutionalism provide a fertile ground for the cross-disciplinary approach to the treatment of institutions within international business. If the configurations of institutions ‘matter’ for numerous sub-domains

of international business scholarship, then clearly a quantitative blueprint to assess institutional diversity remains central to the momentum of such ‘institutional turn’.

This research provides a natural framework to extend institutional approaches in international business research with the concentration of institutional diversity theorised to shape the behaviour of companies. The inclusion of a wider set of institutions coupled with our quantitative capitalist framework that specifies objective diversity of political economies arguably lends to a richer explanation of how institutional variance can impact the activities and conduct of firms. Specifically, this research allows international business scholars to lend closer attention to the particular institutional context within which firms operate (Allen, 2004; Lange 2009). This can be achieved in several ways. For example, the proximity matrix (Fig B.5) provides a natural focus on the ‘institutional distance’ between countries and clusters. Much IB work on cross-national differences and country distance has been influenced by cultural value theory, stressing underlying differences in cultural values that impact firm behaviour. Specifically it is argued that the cultural distance between home and host countries is important for MNE’s entry mode decisions and broader decisions of internationalisation (Brouthers 2002; Meyer, 2001; Brouthers & Hennart, 2007). Beyond the concept of distance as defined by cultural variance, cross-country differences can be measured in terms of the institutional diversity between political economies. This study allows international business scholars to measure ‘institutional distance’ by the single proximity score between either specific countries or clusters.

Beyond the use of linear-based analysis of institutional dissimilarity, this research provides a framework to assess the possible importance of particular combinations of institutions. International business has often discussed cross-national diversity either by the terms of ‘economic development’ (e.g. developed versus emerging economies),

or by the relative distance (particularly culture) between sets of countries (Jackson & Deeg, 2008) rather than institutions as particular configurations and typologies (Jackson & Deeg, 2019). Therefore, how institutions matter can be determined by which divergent 'set' of institutions rather than the particular effectiveness of a given institution. This provides substantial scope for future institutional based international business research, where institutional frameworks provide the natural context to the country 'duality' posed to MNEs (Morgan, 2012). For example, do MNEs from the neo-liberal capitalist cluster find it relatively easier to adapt in other market based capitalist modes? Do capitalist regimes characterised by low product market regulations tend to encourage relatively more market-seeking FDI than non-equity entry modes? Do countries with high human asset specificity tend to encourage more strategic led investments relative to low skill asset specificity countries? As echoed by various authors, the comparative capitalist literature provides a suitable conceptual framework for international business; we have taken this forward with the provision of a quantitative assessment of institutional diversity. Accordingly, our conceptualisation provides ample scope to theorise institutions at different levels and develop a coherent understanding of how institutional diversity (not just institutional convergence) influences various aspects of the international business domain.

Thirteen years ago, Redding (2005, p. 124) observed that "there is scanty attention to context" in much international business research and called for the field to address this issue. This research has responded to this void by focusing particularly on advancing the understanding of the institutional context with a greater basis of statistical and empirical evaluation. Specifically, this work goes beyond the VoC and NBS perspectives to illustrate a more fruitful and comprehensive framework relevant to political economies of the OECD. As such we provide an improved platform for scholars examining the implications of cross-national differences of activity embedded in different and diverse

types of institutional systems, which has recently been called for in the work of Jackson & Deeg (2019). This study offers a more comprehensive and systemic way to think about institutional context. Namely, it transcends geographical boundaries and allows for a parsimonious conceptual and operational mapping of nation-states that may not appear similar (or dissimilar) when looking at a single type of institution or variable (Aguilera et al, 2008). To suitably understand international business context, scholars need to combine a political economies institutions with a configurational arrangement as executed here. After all, "within that [International Business] literature, the analysis focuses on a relatively narrow range of institutions. Even within the comparative capitalisms perspective, there has been a tendency to overlook the impact that the absence of key institutions can have on outcomes" (Allen & Aldred, 2012, p. 402)

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Appendix A

Estimation Equations

Pooled OLS Estimation

Pooled OLS estimation begins with the basis form of Eq (A.1) below:

$$y_i = X_i \beta_{pool} + u_i \tag{A.1}$$

where...

$$y_i = (y_{i1}, \dots, y_{it})$$

$$X_i = (y_{i,t-1}, x_{1it}, \dots, x_{kit})$$

$$\beta_{pool} = (\alpha, \beta_1, \dots, \beta_k)$$

$$u_i = (u_{i1}, \dots, u_{it})$$

The coefficient vector β_{pool} can be obtained by assuming orthogonality conditions $E(X_i u_i) = 0$, which yields the following calculation:

$$E[X_i(y_i - X_i \beta_{pool})] = 0$$

$$E(X_i X_i) \beta_{pool} = E(X_i y_i)$$

$$\beta_{pool} = [E(X_i X_i)]^{-1} E(X_i y_i)$$

So the pooled OLS estimator is obtained as:

$$\beta_{pool} = (N^{-1} \sum X_i X_i)^{-1} (N^{-1} \sum X_i y_i) \quad (\text{A.2})$$

Random Effects Estimation

Here random heterogeneity comes into play. Consider $\alpha_1^*, \dots, \alpha_N^*$ as realisations of N independent draws from a probability distribution which characterises the population from which the N individuals, here countries i , are selected. The regression equation is therefore:

$$y_{it} = \alpha_i^* + x_{it} \beta + u_{it}, i = 1, \dots, N; t = 1, \dots, T, \quad (\text{A.3})$$

where $x_{it} = (x_{1it}, \dots, x_{Kit})$ contains the observations on the K regressors from individual country i in period t , and $\beta = (\beta_1, \dots, \beta_K)'$ is its coefficient vector, common to all countries i . The individual-specific intercepts, α_i^* satisfy:

$$\begin{aligned} E(\alpha_i^*|X) = k, \text{var}(\alpha_i^*|X) = \sigma_\alpha^2, \text{cov}(\alpha_i^*, \alpha_j^*|X) = 0(i \neq j); \\ i, j = 1, \dots, N \end{aligned} \tag{A.4}$$

where k and σ_α^2 are unknown constants and X symbolises all values of x_{it} in the data set. Choosing this formulation instead, it reduces the number of unknown parameters describing the individual-specific intercepts from N to two: the expectation k and the variance σ_α^2 . It economises on the number of unknown parameters as compared with using fixed individual-specific effects, and the reduction is substantial since N will often be large.

Letting $\alpha_i = \alpha_i^* - E(\alpha_i^*) = \alpha_i^* - k$, the model with K regressors, stochastic individual-specific effects, and disturbance homoskedasticity reads:

$$\begin{aligned} y_{it} = k + x_{it}\beta + \alpha_i + u_{it} = k + x_{it}\beta + \epsilon_{it}, \epsilon_{it} = \alpha_i + u_{it}, \\ (u_{it}|X) \sim iid(0, \sigma^2), (\alpha_i|X) \sim IID(0, \sigma_\alpha^2), \\ u_{it} \perp \alpha_i, i = 1, \dots, N; t = 1, \dots, T, \end{aligned} \tag{A.5}$$

where \perp denotes ‘orthogonal to’ and ϵ_{it} can be interpreted as a composite, gross disturbance, generated by one simple random draw for country i and one random draw made repeatedly for country i in each period.

OLS Regression Estimator

OLS regression estimates the mean of the dependant variable (Y) conditional on the independent variable (X). The conditional mean of Y is:

$$E(y_i|x_i) = \beta_0 + \beta_1 x_i \quad (\text{A.6})$$

The OLS estimator computes the parameter estimates by minimising the sum of squared residuals:

$$\sum_i (y_i - (\beta_0 + \beta_1 x_i))^2 \quad (\text{A.7})$$

Appendix B

Variable Classification

Table B.1 Overview of Country Samples

ISO 3166-1 Alpha-3 Code	Country
AUS	Australia
AUT	Austria
BEL	Belgium
CAN	Canada
CHL	Chile
CZE	Czech Republic
DEN	Denmark
EST	Estonia
FIN	Finland
FRA	France
GER	Germany
HUN	Hungary
ITA	Italy
JAP	Japan
KOR	South Korea
LUX	Luxembourg
MEX	Mexico
NLD	Netherlands
NZL	New Zealand
NOR	Norway
POL	Poland
PRT	Portugal
SLV	Slovenia
SVK	Slovakia
ESP	Spain
SWE	Sweden
SWI	Switzerland
GBR	United Kingdom
USA	United States

Fig. B.1 Manifest Variables: Labour Market

Dimension	Measure	Definition	Source
Labour Markets	Protection of Permanent Workers against Individual and Collective Dismissal	Protection of permanent workers with respect to (i) procedural inconveniences (ii) notice periods and severance pay and (iii) difficulty of dismissal (index points 0-6, least to most restrictive)	OECD
	Protection of Permanent Workers against Individual Dismissal	Protection of permanent workers with respect to (i) individual procedural inconveniences (ii) notice periods and severance pay and (iii) difficulty of individual dismissal (index points 0-6, least to most restrictive)	OECD
	Regulation on Temporary Forms of Employment	Regulation of fixed-term and temporary work agency contracts with respect to the type of work for which these contracts are allowed and their duration; regulation governing the establishment and operation of temporary work agencies; requirements for agency workers to receive the same pay and/or conditions as equivalent workers in the user firm, which can increase the cost of using temporary agency workers relative to hiring workers on permanent contracts (index points 0-6, least to most restrictive)	OECD
	Union Density	Ratio of wage and salary earners that are trade union members, divided by the total number of wage and salary earners	ICTWSS
	Wage Coordination	Degree of wage coordination from 1 = fragmented wage bargaining confined largely to individual firms or plants, 5 = centralised wage bargaining	ICTWSS
	Flexibility of Wage Determination	How are wages generally set in your country? (1 = by a centralised bargaining process; 7 = up to each individual company)	WEF
	Public Expenditure on Public Employment Services	Public expenditure on public employment services including an employment fund which is spent on training, wage subsidies and work experience, benefit administration and placement/related services by both public and private providers as a % of GDP	OECD
	Public Expenditure on Training	Public expenditure on labour market training programmes including institutional training, workplace training, integrated training and special support for apprenticeships as a % of GDP	OECD
Public Expenditure on Sheltered, Rehabilitation & Supported Employment	Public expenditure on sheltered, supported employment and rehabilitation as a % of GDP	OECD	

Fig. B.2 Manifest Variables: Product Market

Dimension	Measure	Definition	Source
Product Markets	Administration Burden for Corporations	Administrative burdens on creating a public limited company (index points 0-6, least to most restrictive)	OECD
	Administration Burden for Sole Proprietor Firms	Administration burdens on creative individual enterprise (index points 0-6, least to most restrictive)	OECD
	Communication and Simplification of Rules & Regulations	Governments communication strategy and efforts to reduce and simplify the administration burden of interacting with the Government (index points 0-6, least to most restrictive)	OECD
	Barriers in Network Sector	Entry barriers in 8 network sectors and degree of vertical separation in the gas, electricity and rail transport sectors (index points 0-6, least to most restrictive)	OECD
	Legal Barriers to Entry	Pervasiveness of barriers to entry in 30 business sectors as a share of sectors in which there are explicit legal limitations on the number of competitors (index points 0-6, least to most restrictive)	OECD
	Scope of State Owned Enterprises	Pervasiveness of State ownership across 30 business sectors measured as a share of sectors in which the state controls at least one firm (index points 0-6, least to most restrictive)	OECD
	Government Involvement in Network Sector	Government stakes in the largest firms in 6 network sectors (electricity, gas, rail transport, air transport, postal services & telecommunications) - (index points 0-6, least to most restrictive)	OECD
	Government Control over Private Enterprises	Indicators of the licensing & permit system, enterprise procedures, administration burdens on start-ups, scope of legal barriers, existence of anti-trust exemptions for public enterprises (index points 0-6, least to most restrictive)	OECD
	Government use of Price Controls	Extent and type of price controls in the economy (index points 0-6, least to most restrictive)	OECD

Fig. B.3 Manifest Variables: Education System

Dimension	Measure	Definition	Source
Education System	Gross Domestic Expenditure on R&D	Gross domestic expenditure on Research & Development (GERD), defined as the total expenditure on R&D carried out by all resident companies, research institutes, University and Government laboratories as % of GDP	OECD
	Publicly Financed R&D	Public expenditure on Research & Development (R&D) as a % of GDP	OECD
	Percentage of Labour Force with Tertiary Level as Highest Level of Education	Labour force with tertiary education is the share of the total labour force that attained or completed tertiary education as the highest level of education.	World Bank
	Expenditure on Primary Education as % of Government Expenditure on Education	Public expenditure on primary education as a share of total government expenditure on education.	OECD
	Expenditure on Secondary Education as % of Government Expenditure on Education	Public expenditure on secondary education as a share of total government expenditure on education.	OECD
	Share of Population by Education Attainment: Upper Secondary & Post-Secondary Non-Tertiary – <u>General Education</u>	Population with upper secondary & post-secondary non-tertiary 'general education' is the share of the population that attained or completed such qualification level as their highest level of education	OECD
	Share of Population by Education Attainment: Upper Secondary & Post-Secondary Non-Tertiary – <u>Vocational Training</u>	Population with upper secondary & post-secondary non-tertiary 'vocational education' is the share of the population that attained or completed such qualification level as their highest level of education	OECD
	Percentage of Labour Force with Secondary Education as Highest Level of Education	Labour force with secondary education is the share of the total labour force that attained or completed secondary education as the highest level of education.	World Bank
	Unemployment Rates by Education Attainment – Upper Secondary & Post-Secondary Non-Tertiary Education	Unemployment rates of those in the labour force whom their highest level of educational attainment is 'Upper Secondary & Post-Secondary Non-Tertiary Education'	OECD

Fig. B.4 Manifest Variables: Financial System

Dimension	Measure	Definition	Source
Financial System	Ease of Access to Loans	In your country, how easy is it to obtain a bank loan with only a good business plan and no collateral? (1 = extremely difficult; 7 = extremely easy)	WEF
	Availability of Financial Services	In your country, to what extent does the financial sector provide a wide range of financial products and services to businesses? (1 = not at all; 7 = provides a wide variety)	WEF
	Venture Capital Availability	In your country, how easy is it for entrepreneurs with innovative but risky projects to find venture capital? (1 = extremely difficult; 7 = extremely easy)	WEF
	Financing through Local Equity Markets	In your country, how easy is it for companies to raise money by issuing shares on the stock market? (1 = extremely difficult; 7 = extremely easy)	WEF
	Five Bank Asset Concentration	Assets of five largest banks as a share of total commercial banking assets.	World Bank
	Bank Concentration (%)	Assets of three largest commercial banks as a share of total commercial banking assets.	World Bank
	Pension Fund Assets to GDP	Ratio of assets of pension funds to GDP. A pension fund is any plan, fund, or scheme that provides retirement income.	World Bank
	Stock Market Capitalisation	Total value of all listed shares in a stock market as a % of GDP	World Bank
	Stock Market Total Value Traded to GDP	Total value of all traded shares in a stock market exchange as a % of GDP	World Bank

Fig. B.5 Proximity Matrix: Institutional Diversity & Typologies

Case	Proximity Matrix																																	
	Squared Euclidean Distance																																	
	5:FN	6:ND	7:BEL	8:SWI	9:AUT	10:DEU	11:FRA	12:LUX	13:PRT	14:ESP	15:IRL	16:CHL	17:MEX	18:ITA	19:SLV	20:SVK	21:POL	22:HUN	23:CZE	24:EST	25:NZL	26:AUS	27:USA	28:CAN	29:GBR	30:JPN	31:KOR	32:DNK	33:NOR	34:SWI				
5:FN	0.00																																	
6:ND	12.390	0.00																																
7:BEL	7.443	9.881	0.00																															
8:SWI	21.859	10.940	20.414	0.00																														
9:AUT	14.051	14.675	6.754	21.903	0.00																													
10:DEU	11.313	6.734	6.731	16.801	2.919	0.00																												
11:FRA	22.706	14.521	10.718	18.469	11.374	9.328	0.00																											
12:LUX	30.231	25.890	14.762	28.435	17.255	20.675	10.907	0.00																										
13:PRT	24.627	18.037	9.837	24.604	18.923	17.542	7.799	17.021	0.00																									
14:ESP	37.559	25.506	18.731	28.891	27.772	29.556	17.660	21.927	7.298	0.00																								
15:IRL	25.593	15.349	12.732	19.393	18.959	20.823	16.727	22.164	9.501	10.688	0.00																							
16:CHL	47.038	27.948	24.278	24.597	29.721	29.433	26.559	20.491	23.466	28.603	16.245	0.00																						
17:MEX	59.523	44.132	33.509	37.356	31.324	35.316	32.247	27.917	28.416	32.319	26.061	13.002	0.00																					
18:ITA	25.599	15.892	12.037	19.460	11.903	12.895	12.788	19.540	8.937	16.451	14.147	21.378	18.894	0.00																				
19:SLV	30.441	22.871	14.914	22.951	11.831	16.999	16.038	16.885	12.374	15.684	9.737	17.550	17.362	5.443	0.00																			
20:SVK	33.464	24.926	17.948	23.774	13.399	13.257	20.864	24.469	18.991	30.946	22.389	15.431	20.206	9.900	10.573	0.00																		
21:POL	55.051	43.067	30.182	30.343	25.260	31.144	20.166	24.807	21.882	28.304	25.810	19.933	14.881	15.691	13.215	16.025	0.00																	
22:HUN	38.414	27.218	20.389	22.110	15.416	15.904	18.637	28.592	16.250	20.909	16.753	17.552	18.197	10.769	8.838	5.516	12.150	0.00																
23:CZE	35.544	25.701	15.281	25.320	9.898	12.435	9.418	15.335	12.833	19.909	18.362	16.235	16.861	10.338	7.858	7.393	8.067	5.310	0.00															
24:EST	37.776	23.140	20.841	27.714	21.894	20.594	20.500	25.375	18.344	21.513	13.081	13.924	29.273	24.539	15.130	16.542	30.889	13.888	13.057	0.00														
25:NZL	37.628	31.714	23.986	31.178	24.236	28.763	30.506	29.925	26.862	23.678	15.067	22.965	37.298	34.923	24.426	26.183	35.985	20.891	20.598	8.809	0.00													
26:AUS	28.071	15.992	16.589	12.370	21.932	23.067	24.191	26.465	21.207	16.831	9.668	17.266	31.187	21.851	14.978	25.363	30.641	19.383	21.018	11.915	9.012	0.00												
27:USA	58.091	40.452	46.608	28.719	40.178	46.474	47.561	34.431	55.021	42.301	28.713	29.619	41.529	45.000	30.865	46.255	45.322	39.750	41.251	34.319	26.685	17.052	0.00											
28:CAN	30.690	26.795	23.053	19.385	24.562	28.003	29.689	20.348	29.626	27.295	14.065	19.115	27.646	30.253	19.436	31.237	35.393	28.593	27.566	19.669	11.749	8.598	11.554	0.00										
29:GBR	31.125	16.228	23.817	12.785	22.205	22.715	27.437	23.747	29.369	25.203	13.420	19.161	34.088	24.083	17.941	24.074	37.399	22.261	25.992	17.129	15.555	7.372	8.543	7.769	0.00									
30:JPN	36.205	28.953	20.409	23.594	15.995	23.381	21.969	15.478	26.544	20.305	15.737	19.378	22.348	20.027	11.083	25.754	21.466	18.792	14.272	16.625	13.009	10.105	12.664	6.687	12.810	0.00								
31:KOR	48.870	35.479	31.479	26.177	26.376	30.780	26.634	32.019	27.702	20.873	22.629	27.573	18.274	21.895	14.403	32.461	21.205	18.989	18.140	23.234	26.455	14.951	28.141	21.839	26.881	9.859	0.00							
32:DNK	20.507	13.339	15.915	27.844	18.486	20.337	25.715	40.877	26.769	27.213	14.981	45.001	58.130	28.886	28.926	41.963	50.016	35.992	33.111	28.882	24.366	17.568	45.469	30.154	26.405	27.634	36.166	0.00						
33:NOR	16.439	20.369	5.889	26.908	11.088	13.819	15.024	14.766	16.908	25.249	17.993	21.275	35.028	22.933	18.048	21.365	27.871	23.325	13.842	16.167	15.263	16.318	43.092	19.621	26.889	15.524	29.815	21.167	0.00					
34:SWI	16.469	19.356	10.800	24.311	13.855	17.718	23.102	28.507	28.290	28.006	19.871	33.849	47.759	29.389	23.997	33.259	37.315	30.182	23.251	23.797	16.159	12.795	39.458	21.417	28.418	16.595	28.336	9.976	5.726	0.00				

Distance measure given by Squared Euclidean Distance.